

2009

Product Catalog

ROHM
SEMICONDUCTOR

Discrete Semiconductors

Bipolar Transistors

Digital Transistors



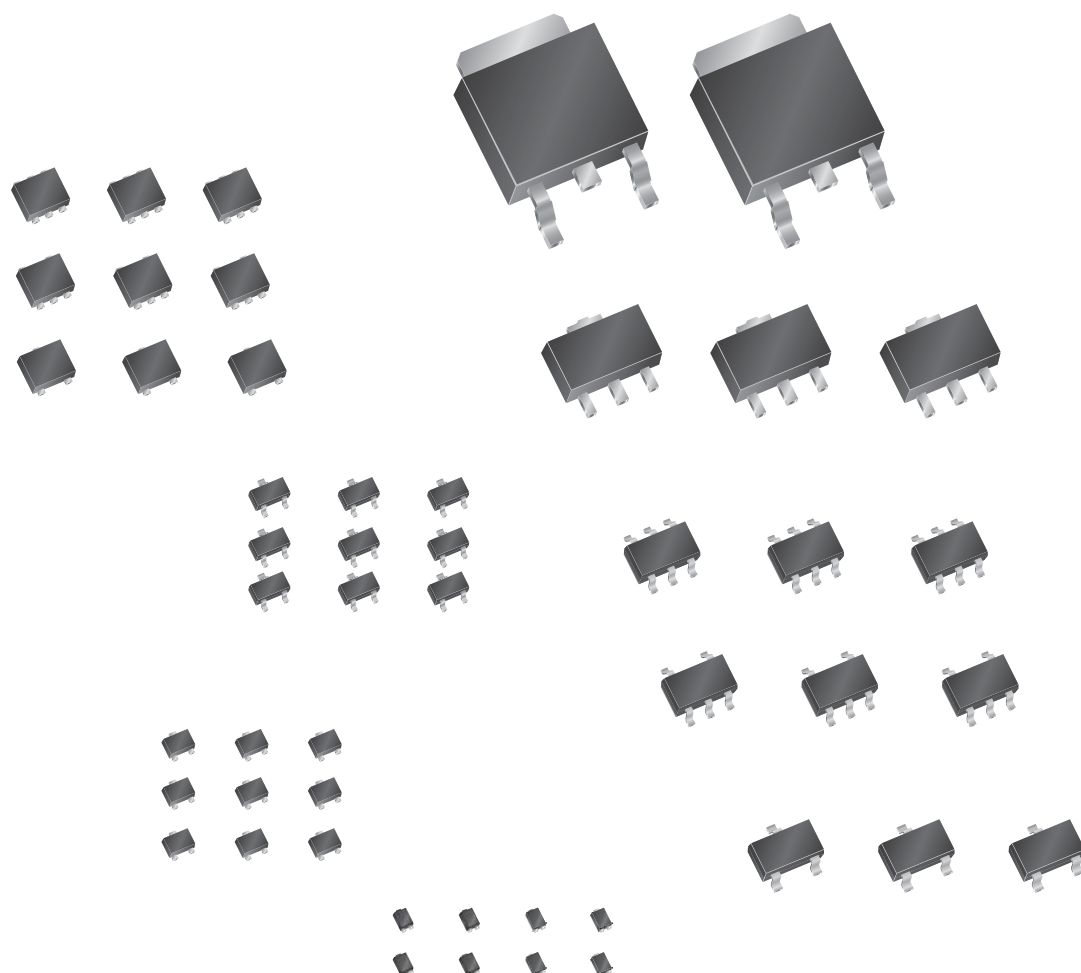
ROHM Co.,Ltd.

Bipolar Transistors

ROHM bipolar transistors were developed to be energy efficient, highly reliable, and compact. A wide range of products are offered, from small-signal an low profile models to high power products.

Digital Transistors

Digital resistors, pioneered by ROHM, incorporate resistor(s) for digital circuits. The broad lineup includes space-saving, ultra-compact types available in a range of internal resistance configurations.



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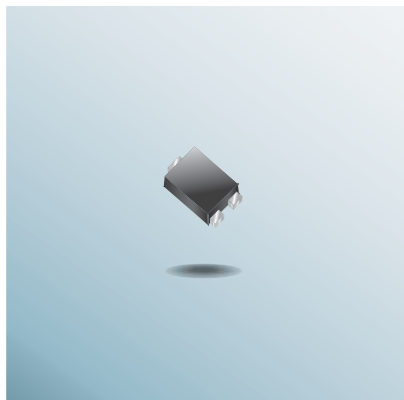
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Ultra-compact Package <VMN3>



60% smaller mounting space,
height reduced 35%

Summary

This series of ultra-compact, low-profile transistors reduce mounting area by 60% and height by 35% compared with conventional VMT3 package types.

Features

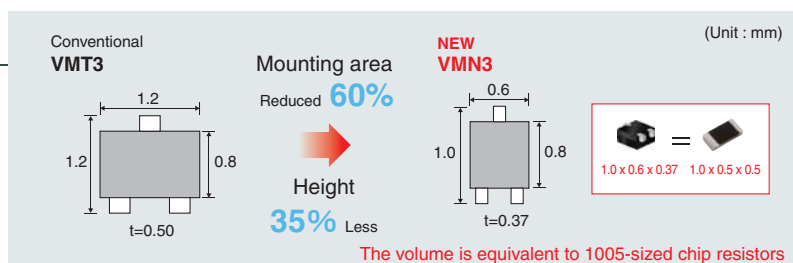
- Ultra-compact
- Low profile

Applications

- Switching in portable devices

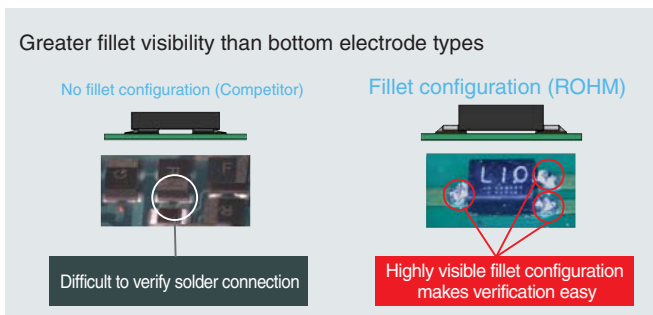
Ultra-compact. Low profile.

Compared to the conventional VMT3 package (1.2x1.2, t=0.5mm), ROHM's new VMN3 (0.6x1.0, t=0.37mm) decreases mounting area by 60% and height by 35%.

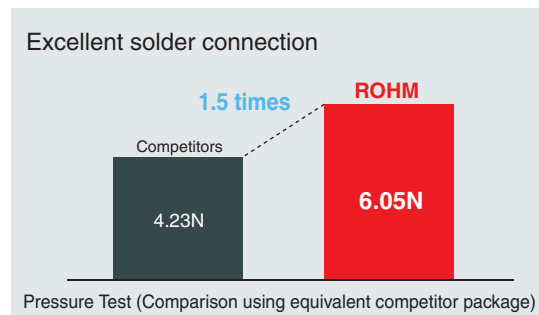


Excellent fillet visibility and superior joint strength

Features 1



Features 2



Lineup

Bipolar Transistors

Part No.	Polarity	V _{CEO} (V)	I _C (mA)	h _{FE}		V _{CE(sat)} Max.	
				@ V _{CE} / I _C		(V)	@ I _C / I _B
2SA2199	PNP	-50	-100	120 to 390	-6V / -2mA	-0.3	-25mA / -2.5mA
2SC6114	NPN	50	100	120 to 390	6V / 2mA	0.3	25mA / 2.5mA

Digital Transistors

Part No.	Polarity	V _{CC} (V)	I _O (mA)	R1 (KΩ)	R2 (KΩ)	GI
New DTA114EB	PNP	-50	-50	10	10	30 or more
New DTC114EB	NPN	50	50	10	10	30 or more
New DTA144EB	PNP	-50	-50	47	47	68 or more
New DTC144EB	NPN	50	50	47	47	68 or more

Compact Complex Package <VMT6>



Mounting space reduced 43%

Summary

The new VMT6 compact complex package reduces mounting area by 43% over conventional EMT6 units and 50% compared to dual-VMT3 configurations.

Features

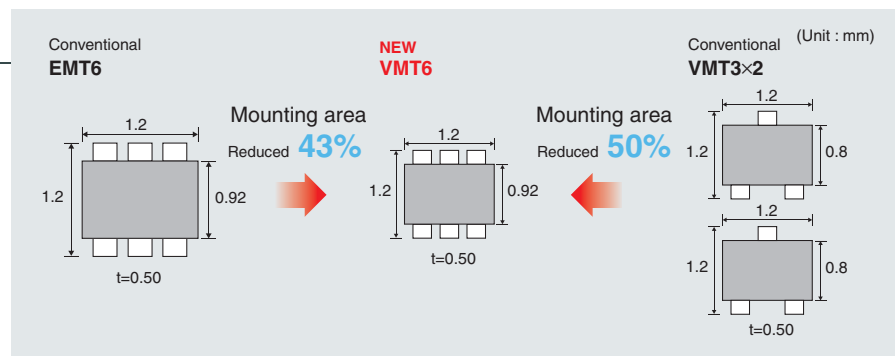
- Ultra-small
- Complex type

Applications

- General-purpose switching applications in portable devices
- Current mirror circuits and more

Ultra-compact • Complex

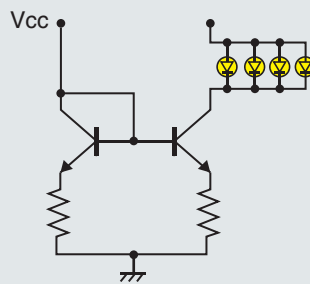
The new VMT6 package reduces mounting area by 43% over conventional EMT6 types. In addition, making the product complex by adding an additional transistor element reduces package size by 50% over conventional dual-VMT3 package solutions (1.2x1.2, t=0.5mm).



Guaranteed h_{FE} characteristics

The h_{FE} of both internal transistors are guaranteed to be nearly identical : $h_{FE1}/h_{FE2} = 0.9-1.1$ (VT6T11, VT6T12, VT6X11, VT6X12)

Current Mirror Circuit



Lineup

Bipolar Transistors

Part No.	V_{CEO} (V)	I_C (mA)	h_{FE}	h_{FE} Ratio	P_c (W)	Equivalent Circuit Diagram
New VT6T1	-20	-200				
VT6T2	-50	-100				
VT6X1	20	200				
VT6X2	50	100				
VT6T11	-20	-200	120 to 560	0.9 to 1.1	0.15	
VT6T12	-50	-100				
VT6X11	20	200				
VT6X12	50	100				

Complex Bipolar Transistors <MPT6>



Reduces mounting area
and number of parts by half

Summary

The new MPT6 package integrates two conventional MPT3 units, resulting in 50% smaller mounting area and 35% less height.

Features

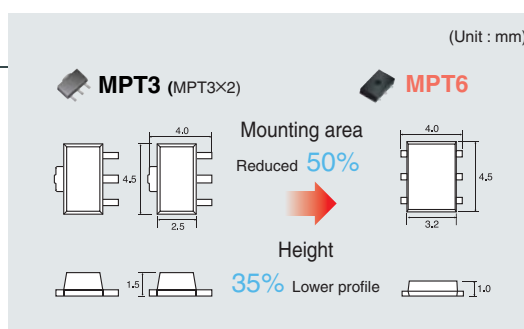
- Space saving

Applications

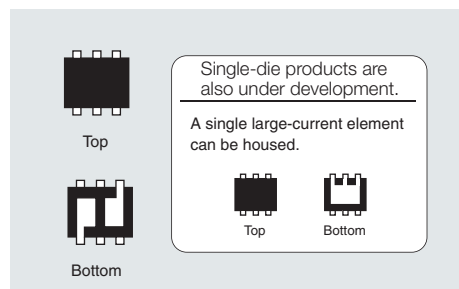
- Buffers
- Collector resonance circuits
- Motor drive circuits

Thin, compact package

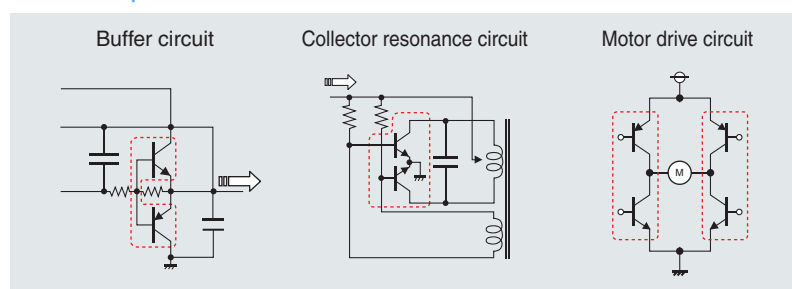
The new package makes it possible to reduce mounting area and the number of transistors by half.



Dimensions



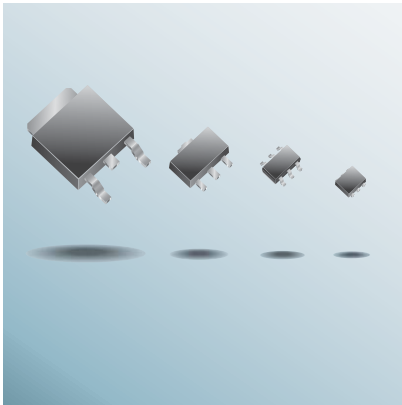
Circuit Examples



Lineup

Part No.	Internal Circuit	Equivalent Element Transistors	V _{CEO} (V)	I _c (A)	h _{FE}
New MP6T1		2SB1132×2	−32	−1	120 to 390
New MP6T2		2SB1188×2	−32	−2	120 to 390
New MP6T3		2SA2071×2	−60	−3	120 to 270
New MP6X1		2SD1664×2	32	1	120 to 390
New MP6X2		2SD1766×2	32	2	120 to 390
New MP6X3		2SC5824×2	60	3	120 to 270
New MP6Z1		2SB1132	−32	−1	120 to 390
New MP6Z2		2SD1664	32	1	120 to 390
		2SB1188	−32	−2	120 to 390
New MP6Z3		2SD1766	32	2	120 to 390
		2SA2071	−60	−3	120 to 270
		2SC5824	60	3	120 to 270
New MP6H1		DTDG14GP×2	60±10	1	300 or more

Transistors for Solenoid/Motor/Relay - Drive



40% smaller mounting area

Summary

All functions required for motor drive, including the clamping diode, current limiting resistor, and protection resistor are integrated into one package, reducing mounting area by 40% over discrete solutions.

Features

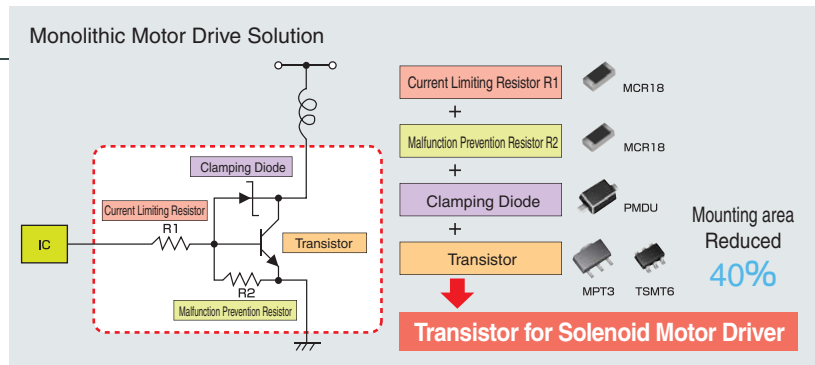
- Space saving
- High breakdown resistance
- Protection function

Applications

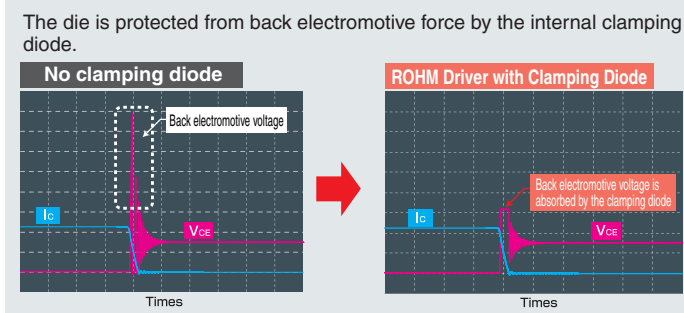
- Automotive systems (e.g. motor/relay drives)

High breakdown resistance in a space-saving design

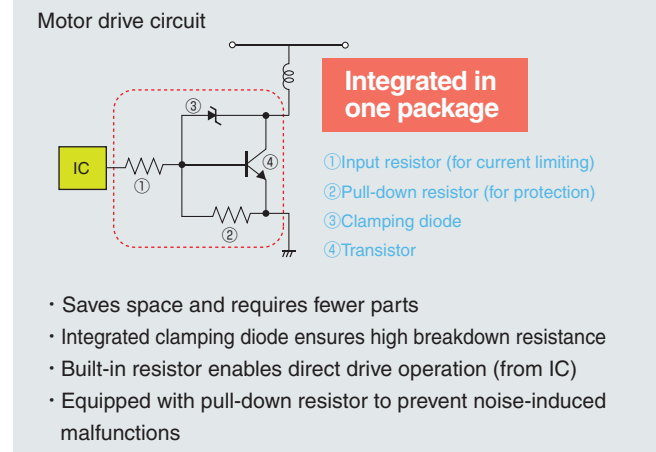
Back EMF generated by coils in the motor is absorbed by the built-in clamp diode featuring high breakdown resistance. Current limiting and protection resistors are also integrated, reducing mounting area by up to 40%.



Characteristics Comparison



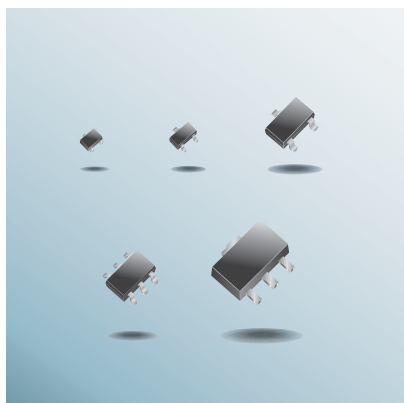
Circuit Example



Lineup

Package	Part No.	Internal Circuit	V _{CE0} (V _{CC}) (V)	I _C (I _O) (A)	h _{FE} (G _I)
MPT3 P _C =0.5W	DTDG23YP		60±10	1	300 or more
	DTDG14GP		60±10	1	300 or more
CPT3 (D-PAK) P _C =1W	2SD2143		60±10	2	1k to 10k
TSMT6 P _C =0.5W	QSH29		60±10	0.5	500 or more
MPT6 P _C =2W	New MP6H1		60±10	1	300 or more

Low $V_{CE(sat)}$ Transistors



80% lower $V_{CE(sat)}$ than conventional products

Summary

A broad array of surface mount package types are offered, from VMT3 to MPT3. Ideal for portable devices requiring low energy consumption.

Features

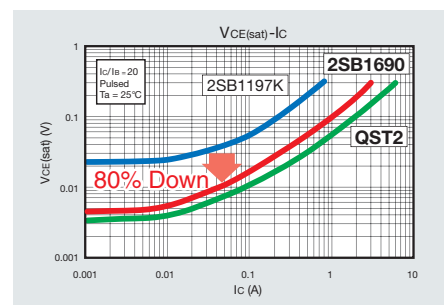
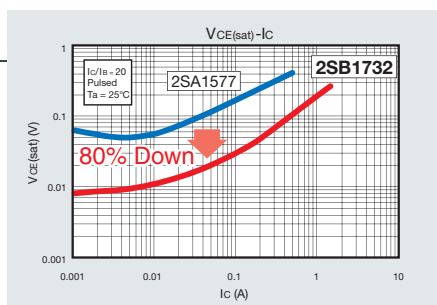
• Low $V_{CE(sat)}$

Applications

- Switching in portable devices
- DC/DC converters

Low $V_{CE(sat)}$

$V_{CE(sat)}$ is reduced by 80% vs. conventional products, contributing to increased power savings. The broad lineup is available in a number of package types, including VMT3 and MPT3 with collector currents up to 6A. Optimized for a variety of applications, especially portables.



Lineup

Single Type (Surface Mount Type)

Package	VMT3		EMT3		UMT3		SMT3		V _{CEO} (V)	I _C (A)	h _{FE} *2
	 Pc=0.15W		 Pc=0.15W		 Pc=0.2W		 Pc=0.2W				
Polarity	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN			
Application	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN			
Low V _{CE} (sat)	2SA2030	2SC5663	2SA2018	2SC5585	—	—	2SA2119K	—	12	0.5	270 to 680
	—	—	—	—	2SB1689	2SD2652	—	—	12	1.5	270 to 680
	—	—	—	—	—	—	2SB1690K	2SD2653K	12	2	270 to 680
	—	2SD2696	—	—	—	—	—	—	30	0.4	270 to 680
	—	—	—	—	2SB1694	2SD2656	—	—	30	1	270 to 680
	—	—	—	—	—	—	2SB1695K	2SD2657K	30	1.5	270 to 680

Package	TUMT3		TUMT6		TSMT3		TSMT6		MPT3		V _{CEO} (V)	I _C (A)	h _{FE} *2
	 Pc=0.4W		 Pc=0.4W		 Pc=0.5W		 Pc=0.5W		 Pc=0.5W				
Polarity	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN			
Application	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN			
Low V _{CE} (sat)	2SB1732	2SD2702	—	—	2SB1709	2SD2674	—	—	—	—	12	1.5	270 to 680
	2SB1730	2SD2700	US6T6	US6X5	2SB1690	2SD2653	QST6	QSX5	2SB1697	2SD2661	12	2	270 to 680
	—	—	US6T4	US6X3	2SB1705	2SD2670	QST4	QSX3	2SB1713	2SD2678	12	3	270 to 680
	—	—	—	—	2SB1707	2SD2672	—	—	—	—	12	4	270 to 680
	—	—	—	—	—	—	QST2	QSX1	—	—	12	6	270 to 680
	2SB1733	2SD2703	—	—	2SB1710	2SD2675	—	—	—	—	30	1	270 to 680
	2SB1731	2SD2701	US6T7	US6X6	2SB1695	2SD2657	QST7	QSX6	2SB1698	2SD2662	30	1.5	270 to 680
	—	—	US6T5	US6X4	2SB1706	2SD2671	QST5	QSX4	2SB1714	2SD2679	30	2	270 to 680
	—	—	—	—	2SB1708	2SD2673	—	—	—	—	30	3	270 to 680
	—	—	—	—	—	—	QST3	QSX2	—	—	30	5	270 to 680

*1 : When mounted on a recommended land pattern.

*2 : For h_{FE} please refer to the specifications

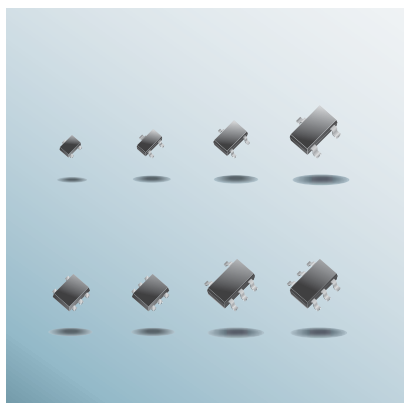
Note : (-) symbol omitted for PNP elements.

Dual Type (Surface Mount Type)

Configuration	Package		EMT5 / EMT6	UMT5 / UMT6	SMT5 / SMT6	TUMT5 / TUMT6	TSMT5 / TSMT6	Equivalent Element Transistors	V _{CEO} (V)	I _C (mA)	h _{FE}
											
	Application	Equivalent Circuit Diagram (TOP View)	Part No.								
PNP×2	Pre-amp		EMT18	UMT18N	IMT18	—	—	2SA2018×2	−12	−500	270 to 680
	Driver		—	—	—	US6T8	QST8	2SB1709×2	−12	−1.5(A)	270 to 680
			—	—	—	US6T9	QST9	2SB1710×2	−30	−1(A)	270 to 680
NPN×2	Pre-amp		EMX18	UMX18N	—	—	—	2SC5585×2	12	500	270 to 680
			EMX28	—	—	—	—	2SD2696×2	30	400	270 to 680
	Driver		—	—	—	US6X7	QSX7	2SD2674×2	12	1.5(A)	270 to 680
			—	—	—	US6X8	QSX8	2SD2675×2	30	1(A)	270 to 680
PNP + NPN	Pre-amp		EMZ7	—	—	—	—	2SA2018 2SC5585	−12 12	−500 500	270 to 680 270 to 680
			EMZ8	—	—	—	—	2SA2018 2SC2412K	−12 50	−500 150	270 to 680 120 to 560
	DC-DC Converter		—	—	—	—	QSZ1	2SB1690 2SD2653	−12 12	−2(A) 2(A)	270 to 680 270 to 680
			—	—	—	—	QSZ2	2SB1695 2SD2657	−30 30	−1.5(A) 1.5(A)	270 to 680 270 to 680
			—	—	—	—	QSZ3	2SB1705 2SD2670	−12 12	−3(A) 3(A)	270 to 680 270 to 680
			—	—	—	—	QSZ4	2SB1706 2SD2671	−30 30	−2(A) 2(A)	270 to 680 270 to 680
			—	—	—	—	—	—	—	—	—
PNP+Di	DC-DC Converter		EML4	UML4N	—	—	—	2SA2018 RB521S-30	−12 30	−500 200	270 to 680 —
			—	—	FML9	US5L9	QSL9	2SB1689 RB461F	−12 20	−1.5(A) 700	270 to 680 —
			—	—	—	US5L11	QSL11	2SB1710 RB461F	−30 20	−1(A) 700	270 to 680 —
NPN+Di			EML6	UML6N	—	—	—	2SC5585 RB521S-30	12 30	500 200	270 to 680 —
	—		—	FML10	US5L10	QSL10	2SD2652 RB461F	12 20	1.5(A) 700	270 to 680 —	
	—		—	—	US5L12	QSL12	2SD2675 RB461F	30 20	1(A) 700	270 to 680 —	

Note : Pin 1 is located at the upper right in the equivalent circuit diagrams for EMT5, EMT6, UMT5, UMT6, TUMT5, TUMT6, TSMT5, and TSMT6
Pin 1 is located at the lower right in the equivalent circuit diagrams for SMT5 and SMT6

Low $V_{CE(sat)}$ Digital Transistors



Significantly lower $V_{CE(sat)}$

Summary

ROHM offers a variety of low $V_{CE(sat)}$ digital transistors, including both single- and dual-element types. Ideal for load switching in portable devices.

Features

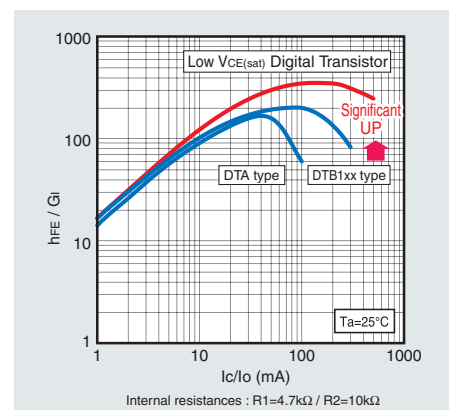
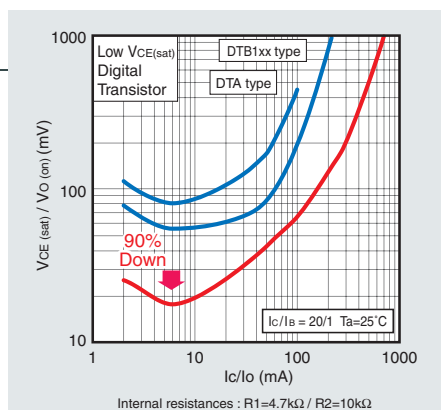
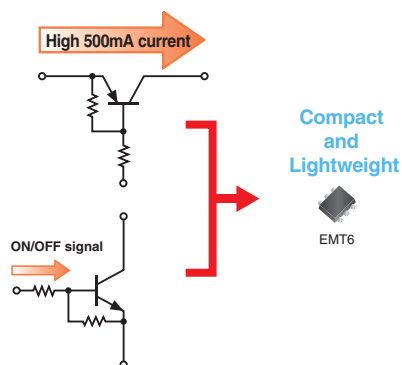
- Low $V_{CE(sat)}$

Applications

- General-purpose switching
- Load switches and more

Low $V_{CE(sat)}$

Low $V_{CE(sat)}$ saves power, prolonging battery life in portable devices.

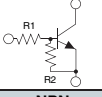


Available in the compact EMT6 (1612 size) package

A low $V_{CE(sat)}$, large current digital transistor and a small signal transistor are integrated into a single package – ideal for switching applications in power management circuits.

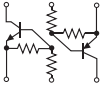
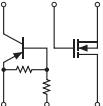
Lineup

Single Type

Specification Type	Item Type	Part No.		R1 (kΩ)	R2 (kΩ)	Package		V _{CC} (V _{CEO}) (V)	I _o (I _c) (mA)	G _I (h _{FE})
						VMT3	EMT3			
										
R1 ≠ R2 potential divider type	500mA	—	DTD543E□	4.7	4.7	●	●	12	500	120
R1 ≠ R2 leak absorption type	200mA	DTB713Z□	DTD713Z□	1	10	●	●	30	200	140 or more
		DTB723Y□	DTD723Y□	2.2	10	●	●	30	200	140 or more
		DTB743X□	DTD743X□	4.7	10	●	●	30	200	140 or more
		DTB743Z□	DTD743Z□	4.7	47	●	●	30	200	150 or more
	500mA	DTB513Z□	DTD513Z□	1	10	●	●	12	500	140 or more
		DTB523Y□	DTD523Y□	2.2	10	●	●	12	500	140 or more
		DTB543X□	DTD543X□	4.7	10	●	●	12	500	140 or more
□ : Packaging designation symbol					M	E				

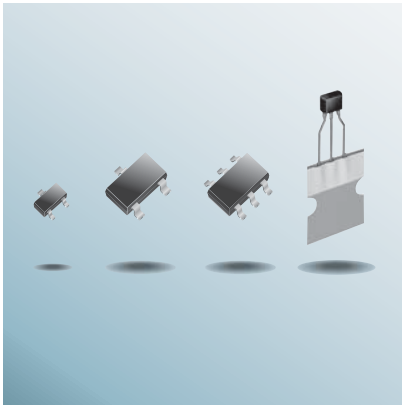
Notes : (-) symbol omitted for PNP elements

Dual Type

Configuration	Package		EMT5 / 6		Equivalent Element Transistors
	Application	Item			
			Part No.		
PNP+NPN	Power Management		EMD29		DTB513Z DTC114E
			EMD30		DTB713Z DTC114E
DTR+MOS	Power Management		EMF33		DTB513Z 2SK3019

Notes : Pin 1 is located at the upper right in the Equivalent Circuit Diagrams

Muting Transistors



High h_{FE} · High V_{EBO}

Summary

High h_{FE} and V_{EBO} make this series ideal for audio muting circuits.

Features

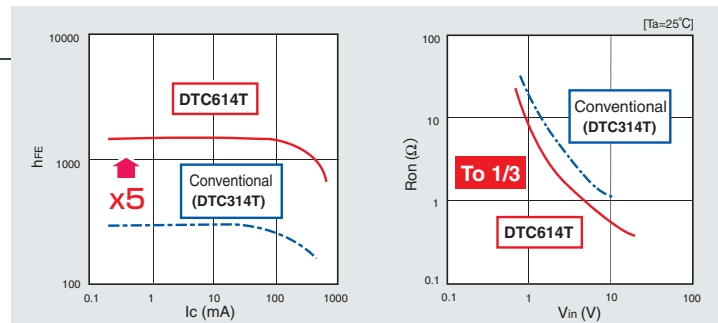
- High h_{FE}
- High V_{EBO}

Applications

- Home audio
- Car audio
- Muting circuit for audio applications

Excellent muting characteristics

High h_{FE} and V_{EBO} ensure excellent muting characteristics. Multiple package types are offered, ranging from surface mount UMT3 types to leaded SPT units, for broad compatibility.



Lineup

■ With built-in resistor

Part No.	R1(kΩ)	Equivalent circuit diagram	Package			VEBO(V)	VCE0(V)	Ic(mA)	Ron(Ω)
			UMT3	SMT3	SPT				
DTC623T□	2.2		●	●	●	12	20	600	0.4
DTC643T□	4.7		●	●	●	12	20	600	0.55
DTC614T□	10		●	●	●	12	20	600	0.9
□ : Packaging designation symbol			U	K	S				

■ With built-in resistor (Dual Element type)

Part No.	R1(kΩ)	Equivalent circuit diagram	Equivalent element transistors	Package		$V_{EBO}(V)$	$V_{CEO}(V)$	$I_C(mA)$	$R_{on}(\Omega)$
				SMT6	TUMT6				
US6H23	4.7		DTC643T	—	●	12	20	600	0.55
IMH23				●	—	12	20	600	0.55
IMH21	10		DTC614T	●	—	12	20	600	0.9

■ Single Type

Package				$V_{EBO}(V)$	$V_{CEO}(V)$	$I_C(mA)$	h_{FE}	$R_{on}(\Omega)$
EMT3	UMT3	SMT3	SPT					
—	—	2SD2704K	2SD2705S	25	20	300	820 to 2700	0.7
2SD2654	2SD2351	2SD2226K	2SD2227S	12	50	150	820 to 2700	0.9
—	—	2SD2114K	2SD2144S	12	20	500	560 to 2700	0.8

■ Dual Type

Package		Equivalent circuit diagram	Equivalent element transistors	$V_{EBO}(V)$	$V_{CEO}(V)$	$I_C(mA)$	h_{FE}	$R_{on}(\Omega)$
EMT6	SMT6							
—	IMX25		2SD2704K	25	20	300	820 to 2700	0.7
EMX26	—		2SD2654	12	50	150	820 to 2700	0.9
—	IMX9		2SD2114K	12	20	500	560 to 2700	0.8

Bipolar Transistors

■ Surface Mount Type

Package Polarity Application	VMN3		VMT3		EMT3F		EMT3		V _{CEO} (V)	I _C (A)	h _{FE} *2
	 ^{*1} Pc=0.15W		 ^{*1} Pc=0.15W		 ^{*1} Pc=0.15W		 ^{*1} Pc=0.15W				
	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN			
General Purpose Amplification	2SA2199	2SC6114	—	—	—	—	—	—	50	0.1	120 to 390
	—	—	2SA2029	2SC5658	2SA1774EB	2SC4617EB	2SA1774	2SC4617	50	0.15	120 to 390
	—	—	—	—	—	—	—	—	120	0.05	180 to 560
Low V _{CE} (sat)	—	—	2SA2030	2SC5663	—	—	2SA2018	2SC5585	12	0.5	270 to 680
	—	—	—	—	—	—	—	—	15	0.5	120 to 560
	—	—	—	—	—	—	—	—	15	1	120 to 270/ 180 to 390
	—	—	—	—	—	—	—	—	12	1.5	270 to 680
	—	—	—	—	—	—	—	—	12	2	270 to 680
	—	—	—	2SD2696	—	—	—	—	30	0.4	270 to 680
	—	—	—	—	—	—	—	—	30	1	270 to 680
	—	—	—	—	—	—	—	—	30	1.5	270 to 680
Driver	—	—	—	—	—	—	—	—	32	0.5	120 to 390
	—	—	—	—	—	—	—	—	32	0.8	120 to 390
	—	—	—	—	—	—	—	—	50	0.5	120 to 390
	—	—	—	—	—	—	—	—	80	0.5	120 to 390
High-speed Switching	—	—	—	—	—	—	—	—	60	0.5	120 to 270/ 120 to 390
High h _{FE} and Muting	—	—	—	—	—	—	—	—	25(V _{EB0})	0.3	820 to 2700
	—	—	—	—	—	—	—	—	20	0.5	820 to 2700
	—	—	—	2SD2707	—	—	—	2SD2654	50	0.15	820 to 2700
High Breakdown Voltage	—	—	—	—	—	—	—	—	300	0.1	56 to 120
High Frequency	—	—	—	2SC5659	—	—	—	2SC4618	25	0.05	82 to180 (f _T =300MHz)
	—	—	—	—	—	—	—	—	6	0.05	180 to 560 (f _T =800MHz)
	—	—	—	2SC5661	—	—	—	2SC4725	20	0.05	82 to180 (f _T =1500MHz)
	—	—	—	2SC5662	—	—	—	2SC4726	11	0.05	56 to180 (f _T =3200MHz)
Darlington*3	—	—	—	—	—	—	—	—	32	0.3	5k or more
	—	—	—	—	—	—	—	—	32 (V _{CE} S)	0.3	5k or more

*1 : When mounted on a recommended land pattern

*2 : For h_{FE}, please refer to the specifications

*3 : For the internal circuit, please refer to the specifications

Note : (—) symbol omitted for PNP elements

■ Surface Mount Type

Package	UMT3F		UMT3		SMT3		V _{CEO} (V)	I _C (A)	h _{FE} *2
	 Pc=0.2W	 Pc=0.2W	 Pc=0.2W						
Polarity	PNP	NPN	PNP	NPN	PNP	NPN			
Application									
General Purpose Amplification	—	—	—	—	—	—	50	0.1	120 to 390
	2SA1576UB	2SC4081UB	2SA1576A	2SC4081	2SA1037AK	2SC2412K	50	0.15	120 to 390
	—	—	2SA1579	2SC4102	2SA1514K	2SC3906K	120	0.05	180 to 560
Low V _{CE} (sat)	—	—	—	—	2SA2119K	—	12	0.5	570 to 680
	—	—	—	—	—	2SD1757K	15	0.5	120 to 560
	—	—	—	—	2SB1590K	2SD2444K	15	1	120 to 270/ 180 to 390
	—	—	2SB1689	2SD2652	—	—	12	1.5	270 to 680
	—	—	—	—	2SB1690K	2SD2653K	12	2	270 to 680
	—	—	—	—	—	—	30	0.4	270 to 680
	—	—	2SB1694	2SD2656	—	—	30	1	270 to 680
	—	—	—	—	2SB1695K	2SD2657K	30	1.5	270 to 680
Driver	—	—	2SA1577	2SC4097	2SA1036K	2SC2411K	32	0.5	120 to 390
	—	—	—	—	2SB1197K	2SD1781K	32	0.8	120 to 390
	—	—	—	2SD1949	—	2SD1484K	50	0.5	120 to 390
	—	—	—	—	2SB1198K	2SD1782K	80	0.5	120 to 390
High-speed Switching	—	—	2SA2088	2SC5876	—	—	60	0.5	120 to 270/ 120 to 390
High h _{FE} and Muting	—	—	—	—	—	2SD2704K	25 (V _{CEO})	0.3	820 to 2700
	—	—	—	—	—	2SD2114K	20	0.5	820 to 2700
	—	—	—	2SD2351	—	2SD2226K	50	0.15	820 to 2700
High Breakdown Voltage	—	—	—	—	—	2SC4061K	300	0.1	56 to 120
High Frequency	—	—	—	2SC4098	—	2SC2413K	25	0.05	82 to 180 (f _T =300MHz)
	—	—	—	2SC4774	—	2SC4713K	6	0.05	180 to 560 (f _T =800MHz)
	—	—	—	2SC4082	—	2SC3837K	20	0.05	82 to 180 (f _T =1500MHz)
	—	—	—	2SC4083	—	2SC3838K	11	0.05	56 to 180 (f _T =3200MHz)
Darlington*3	—	—	—	—	—	2SD2142K	30	0.3	5k or more
	—	—	—	—	2SB852K	2SD1383K	32 (V _{CEs})	0.3	5k or more

*1 : When mounted on a recommended land pattern

*2 : For h_{FE} , please refer to the specifications

*3 : For the internal circuit, please refer to the specifications

Note : (—) symbol omitted for PNP elements

■ Surface Mount Type

Package Polarity Application	TUMT3		TUMT6		TSMT3		TSMT6		V _{CEO} (V)	I _C (A)	h _{FE} *2
	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN			
Low V _{CE} (sat)	2SB1732	2SD2702	—	—	2SB1709	2SD2674	—	—	12	1.5	270 to 680
	2SB1730	2SD2700	US6T6	US6X5	2SB1690	2SD2653	QST6	QSX5	12	2	270 to 680
	—	—	US6T4	US6X3	2SB1705	2SD2670	QST4	QSX3	12	3	270 to 680
	—	—	—	—	2SB1707	2SD2672	—	—	12	4	270 to 680
	—	—	—	—	—	—	QST2	QSX1	12	6	270 to 680
	2SB1733	2SD2703	—	—	2SB1710	2SD2675	—	—	30	1	270 to 680
	2SB1731	2SD2701	US6T7	US6X6	2SB1695	2SD2657	QST7	QSX6	30	1.5	270 to 680
	—	—	US6T5	US6X4	2SB1706	2SD2671	QST5	QSX4	30	2	270 to 680
	—	—	—	—	2SB1708	2SD2673	—	—	30	3	270 to 680
	—	—	—	—	—	—	QST3	QSX2	30	5	270 to 680
High-speed Switching	—	—	—	—	2SA2090	2SC5868	—	—	60	0.5	120 to 270/ 120 to 390
	—	—	—	—	2SA2092	2SC5865	—	—	60	1	120 to 270/ 120 to 390
	—	—	—	—	2SA2094	2SC5866	—	—	60	2	120 to 270/ 120 to 390

Package Polarity Application	MPT3		CPT3		V _{CEO} (V)	I _C (A)	h _{FE} *2
	PNP	NPN	PNP	NPN			
Low V _{CE} (sat)	2SB1697	2SD2661	—	—	12	2	270 to 680
	2SB1713	2SD2678	—	—	12	3	270 to 680
	2SB1424	2SD2150	—	—	20	3	120 to 390/ 180 to 560
	—	—	—	—	20	3	180 to 390
	—	—	2SB1412	2SD2118	20	5	120 to 390
	—	—	2SA1834	2SC5001	20	10	180 to 560/ 120 to 390
	2SB1698	2SD2662	—	—	30	1.5	270 to 680
	2SB1714	2SD2679	—	—	30	2	270 to 680
Driver	2SB1132	2SD1664	—	—	32	1	120 to 390
	2SB1188	2SD1766	2SB1182	2SD1758	32	2	120 to 390
	2SA1900	2SC5053	—	—	50	1	120 to 270/ 120 to 390
	2SA1797	2SC4672	—	—	50	3	120 to 270/ 120 to 390
	—	—	2SB1184	2SD1760	50	3	120 to 390
	2SB1561	2SD2391	—	—	60	2	120 to 270
	—	—	2SA1952	2SC5103	60	5	120 to 270
	2SB1189	2SD1767	—	—	80	0.7	120 to 390
	2SB1260	2SD1898	2SB1181	2SD1733	80	1	120 to 390
	—	—	—	—	120	2	82 to 390
High-speed Switching	2SA2071	2SC5824	2SA2072	2SC5825	60	3	120 to 270/ 120 to 390
	2SB1427	—	—	—	20	2	390 to 820
High h _{FE}	—	2SD2153	—	—	25	2	820 to 1800
	—	—	—	2SD2318	60	3	560 to 1800
High Breakdown Voltage	—	—	—	2SC5161	400	2	25 to 50
Darlington*3	—	2SD1834	—	—	60 (V _{CE} S)	1	2k or more
	—	—	—	2SD2143	60±10	2	1k to 10k
	—	—	2SB1316	2SD1980	100	2	1k to 10k

*1 : When mounted on a recommended land pattern

*2 : For h_{FE}, please refer to the specifications

*3 : For the internal circuit, please refer to the specifications

Note : (—) symbol omitted for PNP elements

■ Leded Type

Package Polarity	SPT		ATV		V _{CEO} (V)	I _C (A)	h _{FE} *3
	 P _C =0.3W*1	 P _C =1W*2					
Application	PNP	NPN	PNP	NPN			
General Purpose amplification	2SA933AS	2SC1740S	—	—	50	0.15	120 to 390
	2SA1038S	2SC2389S	—	—	120	0.05	180 to 560
Low V _{CE} (sat)	—	2SD1468S*5	—	—	15	1	120 to 390
	—	2SD2687S*5	—	—	12	5	350 to 680
	2SA1585S*5	2SC4115S*5	—	—	20	2	120 to 390
Driver	2SA854S	2SC1741S	—	—	32	0.5	120 to 390
	2SA1515S	—	2SB1237	2SD1858	32	1	120 to 390
	—	—	2SB1240	2SD1862	32	2	120 to 390
	—	2SC1741AS	—	—	50	0.5	120 to 390
	—	—	2SB1443	—	50	3	120 to 270
	—	—	2SB1243	2SD1864	50	3	120 to 390
	—	—	2SB1238	2SD1859	80	0.7	120 to 390
	—	2SD1768S	2SB1241	2SD1863	80	1	120 to 390
	—	—	2SB1236	2SD1857	120	1.5 / 2	120 to 390
—	—	2SB1236A	2SD1857A	160	1.5	100 to 200	
High-speed Switching	—	—	2SA2093	2SC5880	60	2	120 to 270/ 120 to 390
	—	—	2SA2073	2SC5826	60	3	120 to 270/ 120 to 390
High h _{FE} and Muting	—	2SD2705S	—	—	25 (V _{EBO})	0.3	820 to 2700
	—	2SD2144S	—	—	20	0.5	820 to 2700
	—	2SD2227S	—	—	50	0.15	820 to 2700
High Breakdown Voltage	—	2SC3415S	—	2SC4015	300	0.1	56 to 120
High Frequency	—	2SC2058S	—	—	25	0.05	82 to 180 (f _T =300MHz)
Darlington*4	—	—	—	2SD1866	60±10	2	1k to 10k
	—	—	—	2SC5060	90±10	1	1k to 2.5k
	—	—	—	2SD1867	100	2	1k to 10k

*1 : When mounted on a recommended land pattern

*2 : When mounted on a 1.7mm board with copper foil no greater than cm^2 in area

*3 : For h_{FE} , please refer to the specifications

*4 : For the internal circuit, please refer to the specifications

*5 : $P_C=0.4W$ supplied

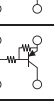
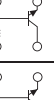
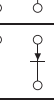
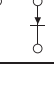
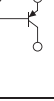
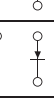
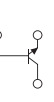
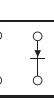
Note : (-) symbol omitted for PNP elements

Complex Bipolar Transistors

■ Surface Mount Type

Configuration	Package	Item		EMT5 / EMT6	UMT5 / UMT6	SMT5 / SMT6	TUMT5 / TUMT6	TSMT5 / TSMT6	New MPT6	Equivalent element transistors	V _{CEO} (V)	I _c (mA)	h _{FE}
	Application	Equivalent circuit diagram (TOP View.)	Part No.										
PNP×2	Pre-amp		EMT1	UMT1N	IMT1A	—	—	—	2SA1037AK×2	—50	—150	120 or more	
			—	—	IMT17	—	—	—	2SA1036K×2	—50	—500	120 to 390	
			EMT18	UMT18N	IMT18	—	—	—	2SA2018×2	—12	—500	270 to 680	
			—	—	—	—	—	MP6T1	2SB1132×2	—32	—1(A)	120 to 390	
		—	—	—	—	—	MP6T2	2SB1188×2	—32	—2(A)	120 to 390		
		—	—	—	—	—	MP6T3	2SA2071×2	—60	—3(A)	120 to 270		
			EMT2	UMT2N	IMT2A	—	—	—	2SA1037AK×2	—50	—150	120 to 560	
			EMT3	—	IMT3A	—	—	—	2SA1037AK×2	—50	—150	120 to 560	
		—	—	IMT4	—	—	—	2SA1514K×2	—120	—50	180 or more		
		Driver		—	—	—	US6T8	QST8	—	2SB1709×2	—12	—1.5(A)	270 to 680
			—	—	—	US6T9	QST9	—	2SB1710×2	—30	—1(A)	270 to 680	
NPN×2	Pre-amp		EMX1	UMX1N	IMX1	—	—	—	2SC2412K×2	50	150	120 or more	
			EMX26	—	—	—	—	—	2SD2654×2	50	150	820 to 2700	
			EMX18	UMX18N	—	—	—	—	2SC5585×2	12	500	270 to 680	
			—	—	IMX9	—	—	—	2SD2114K×2	20	500	560 to 2700	
			—	—	IMX25	—	—	—	2SD2704K×2	20	300	820 to 2700	
			EMX28	—	—	—	—	—	2SD2696×2	30	400	270 to 680	
			—	—	IMX17	—	—	—	2SD1484K×2	50	500	120 to 390	
			—	—	—	—	—	MP6X1	2SD1664×2	32	1(A)	120 to 390	
		—	—	—	—	—	MP6X2	2SD1766×2	32	2(A)	120 to 390		
		—	—	—	—	—	MP6X3	2SC5824×2	60	3(A)	120 to 270		
		EMX2	UMX2N	IMX2	—	—	—	2SC2412K×2	50	150	120 to 560		
			EMX3	UMX3N	IMX3	—	—	—	2SC2412K×2	50	150	120 to 560	
	—		—	IMX8	—	—	—	2SC3906K×2	120	50	180 or more		
	High Frequency		—	UMX21N	—	—	—	—	2SC4713K×2	6	50	180 to 560	
EMX4			UMX4N	IMX4	—	—	—	2SC3837K×2	20	50	56 to 180		
			EMX5	UMX5N	IMX5	—	—	—	2SC3838K×2	11	50	56 to 120	
Driver			—	—	—	US6X7	QSX7	—	2SD2674×2	12	1.5(A)	270 to 680	
			—	—	—	US6X8	QSX8	—	2SD2675×2	30	1(A)	270 to 680	
PNP + NPN	Amplifier		EMY1	UMY1N	FMY1A	—	—	—	2SA1037AK 2SC2412K	—50 50	—150 150	120 or more 120 or more	
	Inverter Driver		—	—	FMY4A	—	—	—	2SA1037AK 2SC2412K	—50 50	—150 150	120 to 560 120 to 560	
	Pre-amp		EMZ1	UMZ1N	IMZ1A	—	—	—	2SA1037AK 2SC2412K	—50 50	—150 150	120 or more 120 or more	
			EMZ7	—	—	—	—	—	2SA2018 2SC5585	—12 12	—500 500	270 to 680 270 to 680	
			—	—	IMZ4	—	—	—	2SA1036K 2SC2411K	—32 32	—500 500	180 to 390 180 to 390	
			EMZ2	UMZ2N	IMZ2A	—	—	—	2SA1037AK 2SC2412K	—50 50	—150 150	120 to 560 120 to 560	
			EMZ8	—	—	—	—	—	2SA2018 2SC2412K	—12 50	—500 150	270 to 680 120 to 560	
			—	—	—	—	—	MP6Z1	2SB1132 2SD1664	—32 32	—1(A) 1(A)	120 to 390 120 to 390	
			—	—	—	—	—	MP6Z2	2SB1188 2SD1766	—32 32	—2(A) 2(A)	120 to 390 120 to 390	
			—	—	—	—	—	MP6Z3	2SA2071 2SC5824	—60 60	—3(A) 3(A)	120 to 270 120 to 270	
	DC/DC Converter		—	—	—	—	QSZ1	—	2SB1690 2SD2653	—12 12	—2(A) 2(A)	270 to 680 270 to 680	
			—	—	—	—	QSZ2	—	2SB1695 2SD2657	—30 30	—1.5(A) 1.5(A)	270 to 680 270 to 680	
			—	—	—	—	QSZ3	—	2SB1705 2SD2670	—12 12	—3(A) 3(A)	270 to 680 270 to 680	
			—	—	—	—	QSZ4	—	2SB1706 2SD2671	—30 30	—2(A) 2(A)	270 to 680 270 to 680	

■ Surface Mount Type

Configuration	Package	Item	Equivalent circuit diagram (TOP View)	EMT5 / EMT6	UMT5 / UMT6	SMT5 / SMT6	TUMT5 / TUMT6	TSMT5 / TSMT6	Equivalent element transistors	V _{CEO} (V)	I _C (mA)	h _{FE}
												
	Application	Part No.										
PNP+DTR	Power Management		EMF5	UMF5N	—	—	—	2SA2018 DTC144E	−12 50	−500 100	270 to 680 68 or more	
			—	UMF28N	—	—	—	2SA1774 DTC124X	−50 50	−150 100	180 to 390 68 or more	
		EMF6	UMF6N	—	—	—	2SA2018 2SK3019	−12 30	−500 100	270 to 680 —		
		EMF32	UMF32N	—	—	—	DTA143T 2SK3019	−50 30	−100 100	100 to 600 —		
		EMF33	—	—	—	—	DTB513Z 2SK3019	−12 30	−500 100	140 or more —		
		EMF8	UMF8N	—	—	—	2SC5585 DTC144E	12 50	500 100	270 to 680 68 or more		
		EMF9	UMF9N	—	—	—	2SC5585 2SK3019	12 30	500 100	270 to 680 —		
PNP+Di		DC/DC Converter		—	UML1N	—	—	—	2SA1774 DAN202K	−50 80	−150 100	120 or more —
				—	UML4N	—	—	—	2SA2018 RB521S-30	−12 30	−500 200	270 to 680 —
				—	—	FML9	US5L9	QSL9	2SB1689 RB461F	−12 20	−1.5(A) 700	270 to 680 —
			—	—	—	US5L11	QSL11	2SB1710 RB461F	−30 20	−1(A) 700	270 to 680 —	
PNP-DTR + Di			EML17	—	—	—	—	DTA144E RB520G-30	−50 30	−100 100	68 or more —	
NPN+Di			—	UML2N	—	—	—	2SC4617 DAN202K	50 80	150 100	120 or more —	
			—	UML6N	—	—	—	2SC5585 RB521S-30	12 30	500 200	270 to 680 —	
			—	—	FML10	US5L10	QSL10	2SD2652 RB461F	12 20	1.5(A) 700	270 to 680 —	
			—	—	—	US5L12	QSL12	2SD2675 RB461F	30 20	1(A) 700	270 to 680 —	
			EML20	—	—	—	—	DTC123J RB521S-30	50 30	100 100	80 or more —	

Pin 1 is located at the upper right in the equivalent circuit diagrams for EMT5, EMT6, UMT5, UMT6, TUMT5, TUMT6, TSMT5, and TSMT6
Pin 1 is located at the lower right in the equivalent circuit diagrams for SMT5 and SMT6

Digital Transistors

Surface Mount Type

Specifications	Item	Part No.		R1 (kΩ)	R2 (kΩ)	Package								VCC (V _{CE0}) (V)	I _O (I _C) (mA)	G _I (h _{FE})
		PNP	NPN													
Type				Pd=150mW				Pd=200mW			Pd=500mW					
R1 = R2 Potential Divider Type	100mA	DTA123E□A	DTC123E□A	2.2	2.2	—	●	—	●	—	●	●	—	50	100	20 or more
		DTA143E□A	DTC143E□A	4.7	4.7	—	●	—	●	—	●	●	—	50	100	20 or more
		DTA114E□A	DTC114E□A	10	10	<i>New</i>	●	●	●	●	●	●	—	50	50	30 or more
		DTA124E□A	DTC124E□A	22	22	—	●	●	●	●	●	●	—	50	30	56 or more
		DTA144E□A	DTC144E□A	47	47	<i>New</i>	●	●	●	●	●	●	—	50	30	68 or more
	200mA	DTA115E□A	DTC115E□A	100	100	—	●	—	●	—	●	●	—	50	20	82 or more
	500mA	DTB743E□	DTD743E□	4.7	4.7	—	●	—	●	—	—	—	—	30	200	120 or more
		DTB543E□	DTD543E□	4.7	4.7	—	●	—	●	—	—	—	—	12	500	120 or more
		DTB113E□	DTD113E□	1	1	—	—	—	—	—	—	●	—	50	500	33 or more
		DTB123E□	DTD123E□	2.2	2.2	—	—	—	—	—	—	●	—	50	500	39 or more
		DTB143E□	DTD143E□	4.7	4.7	—	—	—	—	—	—	●	—	50	500	47 or more
	DTB114E□	DTD114E□	10	10	—	—	—	—	—	—	●	—	50	500	56 or more	
R1 ≠ R2 Leak Absorption Type	100mA	DTA113Z□A	DTC113Z□A	1	10	—	—	—	DTA only	—	●	●	—	50	100	33 or more
		DTA123Y□A	DTC123Y□A	2.2	10	—	—	—	●	—	●	●	—	50	100	33 or more
		DTA123J□A	DTC123J□A	2.2	47	—	●	●	●	●	●	●	—	50	100	80 or more
		DTA143X□A	DTC143X□A	4.7	10	—	●	●	●	●	●	●	—	50	100	30 or more
		DTA143Z□A	DTC143Z□A	4.7	47	—	●	●	●	●	●	●	—	50	100	80 or more
		DTA114W□A	DTC114W□A	10	4.7	—	—	—	●	—	●	●	—	50	100	24 or more
		DTA114Y□A	DTC114Y□A	10	47	—	●	●	●	●	●	●	—	50	70	68 or more
		DTA124X□A	DTC124X□A	22	47	—	●	—	●	—	●	●	—	50	50	68 or more
	200mA	DTA144V□A	DTC144V□A	47	10	—	—	—	—	—	DTC only	●	—	50	100	33 or more
		DTA144W□A	DTC144W□A	47	22	—	—	—	●	—	●	●	—	50	30	56 or more
		DTB713Z□	DTD713Z□	1	10	—	●	—	●	—	—	—	—	30	200	140 or more
		DTB723Y□	DTD723Y□	2.2	10	—	●	—	●	—	—	—	—	30	200	140 or more
		DTB743X□	DTD743X□	4.7	10	—	●	—	●	—	—	—	—	30	200	140 or more
		DTB743Z□	DTD743Z□	4.7	47	—	●	—	●	—	—	—	—	30	200	150 or more
	500mA	DTB513Z□	DTD513Z□	1	10	—	—	—	●	—	—	—	—	12	500	140 or more
		DTB523Y□	DTD523Y□	2.2	10	—	●	—	●	—	—	—	—	12	500	140 or more
		DTB543X□	DTD543X□	4.7	10	—	●	—	●	—	—	—	—	12	500	140 or more
		DTB543Z□	DTD543Z□	4.7	47	—	●	—	●	—	—	—	—	12	500	150 or more
		DTB113Z□	DTD113Z□	1	10	—	—	—	—	—	DTD only	●	—	50	500	56 or more
		DTB123Y□	DTD123Y□	2.2	10	—	—	—	—	—	DTB only	●	—	50	500	56 or more
1A	—	DTDG23YP*1	2.2	10	—	—	—	—	—	—	●	60±10	1(A)	300 or more		
Type using R1 alone as input Resistor	100mA	DTA113TKA	—	1	—	—	—	—	—	—	●	—	50	100	100 to 600	
		—	DTC123TKA	2.2	—	—	—	—	—	—	—	●	—	50	100	100 to 600
		DTA143T□A	DTC143T□A	4.7	—	—	●	●	●	●	●	●	—	50	100	100 to 600
		DTA114T□A	DTC114T□A	10	—	—	●	●	●	●	●	●	—	50	100	100 to 600
		DTA124T□A	DTC124T□A	22	—	—	●	—	●	—	●	●	—	50	100	100 to 600
		DTA144T□A	DTC144T□A	47	—	—	●	—	●	—	●	●	—	50	100	100 to 600
		DTA115T□A	DTC115T□A	100	—	—	●	—	●	—	●	●	—	50	100	100 to 600
	500mA	DTA125T□A	DTC125T□A	200	—	—	—	—	—	—	●	●	—	50	100	100 to 600
		DTB123TK	DTD123T□	2.2	—	—	—	—	—	—	—	●	—	40	500	100 to 600
		DTB143TK	DTD143TK	4.7	—	—	—	—	—	—	—	●	—	40	500	100 to 600
	For Muting	DTB114TK	—	10	—	—	—	—	—	—	—	●	—	40	500	100 to 600
		—	DTC614T□	10	—	—	—	—	—	—	●	●	—	20	600	820 to 2700
—	DTC623T□	2.2	—	—	—	—	—	—	—	●	●	—	20	600	820 to 2700	
—	DTC643T□	4.7	—	—	—	—	—	—	—	●	●	—	20	600	820 to 2700	
Type using R2 alone as Bleeder Resistor	100mA	DTA114G□A	DTC114G□A	—	10	—	—	—	—	—	●	●	—	50	100	30 or more
		DTA124G□A	DTC124G□A	—	22	—	—	—	—	—	DTC only	●	—	50	100	68 or more
		DTA144G□A	DTC144G□A	—	47	—	—	—	DTC only	—	●	●	—	50	100	68 or more
		DTA115G□A	DTC115G□A	—	100	—	—	—	—	—	●	●	—	50	100	68 or more
	500mA	DTB114GK	DTD114GK	—	10	—	—	—	—	—	—	●	—	—	500	56 or more
	1A	—	DTDG14GP*1	—	10	—	—	—	—	—	—	—	●	60±10	1(A)	300 or more
□ : Package designations symbol						B	M	EB	E	UB	U	K	P			

*1 : For the internal circuit, please refer to the specifications

Notes : Part numbers for VMN3, VMT3, EMT3F, EMT3, and UMT3F do not have the suffix 'A'

(-) symbol omitted for PNP elements

Complex Digital Transistors

■ Surface Mount Type

Configuration	Package	Item	Equivalent circuit diagram (TOP View)	EMT5 / 6	UMT5 / 6	SMT5 / 6	TUMT5 / 6	TSMT6	MPT6	Equivalent element transistors
Application			Part No.							
PNP×2	Potential Divider Type		—	UMA1N	FMA1A	—	—	—	—	DTA124EX2
			EMA2	UMA2N	FMA2A	—	—	—	—	DTA144EX2
	Leak Absorption Type		—	UMA9N	FMA9A	—	—	—	—	DTA114EX2
			EMA5	UMA5N	FMA5A	—	—	—	—	DTA123JX2
	Input Resistor Type		EMA3	UMA3N	FMA3A	—	—	—	—	DTA143TX2
			EMA4	UMA4N	FMA4A	—	—	—	—	DTA114TX2
	Potential Divider Type		EMB2	UMB2N	IMB2A	—	—	—	—	DTA144EX2
	Potential Divider Type		EMB11	UMB11N	IMB11A	—	—	—	—	DTA114EX2
NPN×2	Potential Divider Type		EMB10	UMB10N	IMB10A	—	—	—	—	DTA123JX2
	Potential Divider Type		EMB6	UMB6N	—	—	—	—	—	DTA144EX2
	Input Resistor Type		EMB3	UMB3N	IMB3A	—	—	—	—	DTA143TX2
	Potential Divider Type		EMG1	UMG1N	FMG1A	—	—	—	—	DTC124EX2
			EMG2	UMG2N	FMG2A	—	—	—	—	DTC144EX2
			EMG9	UMG9N	FMG9A	—	—	—	—	DTC114EX2
	Input Resistor Type		EMG3	UMG3N	FMG3A	—	—	—	—	DTC143TX2
			EMG4	UMG4N	FMG4A	—	—	—	—	DTC114TX2
			EMG6	UMG6N	FMG6A	—	—	—	—	DTC144TX2
	Potential Divider Type		EMH1	UMH1N	IMH1A	—	—	—	—	DTC124EX2
			EMH2	UMH2N	IMH2A	—	—	—	—	DTC144EX2
	Leak Absorption Type		EMH11	UMH11N	IMH11A	—	—	—	—	DTC114EX2
			EMH9	UMH9N	IMH9A	—	—	—	—	DTC114YX2
	Potential Divider Type		—	UMH5N	IMH 5A	—	—	—	—	DTC124EX2
			EMH6	UMH6N	IMH6A	IMH6	—	—	—	DTC144EX2
	Input Resistor Type		EMH3	UMH3N	IMH3A	—	—	—	—	DTC143TX2
			EMH4	UMH4N	IMH4A	—	—	—	—	DTC114TX2
			EMH15	—	IMH15A	—	—	—	—	DTC144TX2
			—	—	IMH21	—	—	—	—	DTC614TX2
			—	—	IMH23	US6H23	—	—	—	DTC643TX2
			—	UMH8N	IMH8A	—	—	—	—	DTC114TX2
			—	UMH14N	IMH14A	—	—	—	—	DTC144TX2
			—	—	—	—	—	QSH29	—	DTDG14GP×2 (500mA)
PNP + NPN	Potential Divider Type		—	—	—	—	—	—	MP6H1	DTDG14GP×2
			EMD2	UMD2N	IMD2A	—	—	—	—	DTA124E
			EMD3	UMD3N	IMD3A	—	—	—	—	DTC124E
			EMD4	UMD4N	—	—	—	—	—	DTA114E
			EMD12	UMD12N	—	—	—	—	—	DTC114E
	Leak Absorption Type		EMD5	UMD5N	—	—	—	—	—	DTA144E
			EMD9	UMD9N	IMD9A	—	—	—	—	DTC144E
			EMD22	UMD22N	—	—	—	—	—	DTA143X
			EMD38	—	—	—	—	—	—	DTC144E
	Input Resistor Type		EMD6	UMD6N	IMD6A	—	—	—	—	DTA114Y
			EMD29	—	—	—	—	—	—	DTC114Y
	Power Management		EMD30	—	—	—	—	—	—	DTA143Z
			—	—	IMD10A	—	—	—	—	DTC143Z
			—	—	IMD16A	—	—	—	—	DTA113Z
			—	—	—	—	—	—	—	DTC114T
			—	—	—	—	—	—	—	DTC115T

Pin 1 is located at the upper right in the equivalent circuit diagrams for EMT5, EMT6, UMT5, UMT6, TUMT5, TUMT6, TSMT5, and TSMT6
Pin 1 is located at the lower right in the equivalent circuit diagrams for SMT5 and SMT6.

Dimensions

(Unit : mm)

VMN3 	VMT3 	EMT3F 	EMT3 (SC-75A) <SOT-416> 	EMT5 	EMT6
UMT3F 	UMT3 (SC-70) <SOT-323> 	UMT5 (SC-88A) <SOT-353> 	UMT6 (SC-88) <SOT-363> 	SST3 <SOT-23> 	
SMT3 (SC-59) <SOT-346> 	SMT5 (SC-74A) 	SMT6 (SC-74) <SOT-457> 	TSST8 		
TUMT3 	TUMT5 	TUMT6 	WEMT6 		
TSMT3 	TSMT5 	TSMT6 	TSMT8 		
MPT3 (SC-62) <SOT-89> 	MPT6 	SOP8 			
CPT3 (SC-63) <SOT-428> 	TCPT3 	LPTS 	LPTL 		
SPT (SC-72) 	ATV 	TO-220FN 	TO-220FM 	TO-3PF 	

Taping specifications

Taping specifications

Notes : 1) Characters in () under package designation denotes JEITA No. while characters in < > refers to the JEDEC No.
 2) For details of dimensions, please refer to the technical specifications.

MEMO

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