

<h3>NPN General Purpose Transistor</h3>		
<p>FEATURES</p> <ul style="list-style-type: none"> • For switching and amplifier applications. • Complementary PNP Type Available (MMBT4403) <p>MECHANICAL DATA</p> <ul style="list-style-type: none"> • Case: SOT-23 Plastic • Case material: "Green" molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl) • Lead Free in RoHS 2002/95/EC Compliant 		

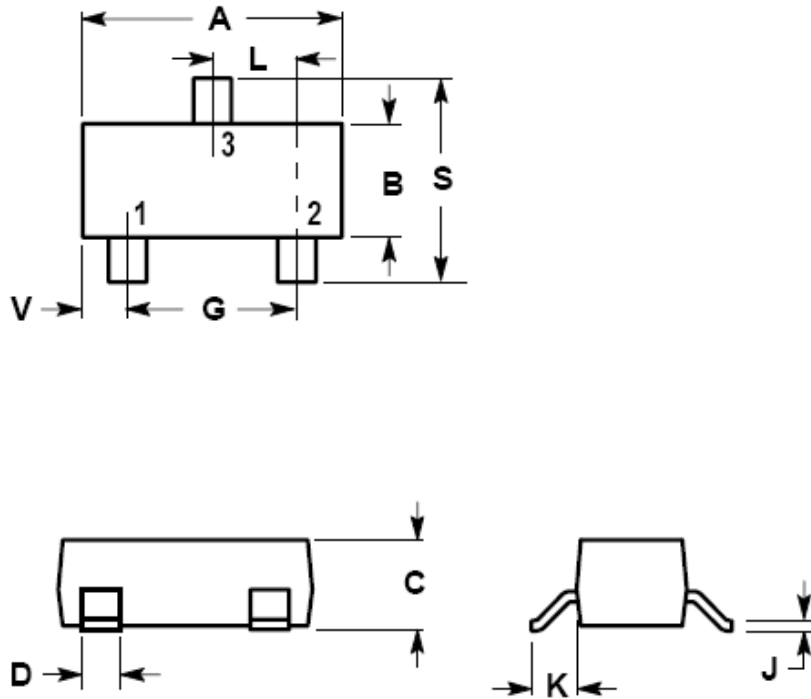
Maximum Ratings @ T_A = 25°C

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	60	V
Collector-Emitter Voltage	V _{CEO}	40	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current -Continuous	I _C	600	mA
Collector Power Dissipation	P _C	300	mW
Thermal Resistance, Junction to Ambient	R _{θJA}	357	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55~+150	°C

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	I _C =100μA, I _E =0	V _{CBO}	60			V
Collector-emitter breakdown voltage	I _C =1mA, I _B =0	V _{CEO}	40			V
Emitter-base breakdown voltage	I _E =100μA, I _C =0	V _{EBO}	6			V
Collector-base cut-off current	V _{CB} =50V, I _E =0	I _{CBO}			0.1	uA
Collector-emitter cut-off current	V _{CB} =60V, V _{EB} =3V	I _{CEX}			12	nA
Emitter-base cut-off current	V _{EB} =5V, I _C =0	I _{EBO}			0.1	uA
DC current gain	V _{CE} =1V, I _C =150mA	h _{FE}	100		300	
Collector-emitter saturation voltage	I _C =150mA, I _B =15mA	V _{CE(sat)}			0.4	V
Base-emitter saturation voltage	I _C =150mA, I _B =15mA	V _{BE(sat)}			0.95	V
Transition frequency	V _{CE} =10V, I _C =20mA, f=200MHz	f _T	250			MHz

SOT-23 Outline Dimension



Symbol	Dimension In Millimeters	
	Min	Max.
A	2.80	3.04
B	1.20	1.40
C	0.89	1.11
D	0.37	0.50
G	1.78	2.04
J	0.085	0.177
K	0.35	0.69
L	0.89	1.02
S	2.10	2.64
V	0.45	0.60

Device Marking:

Device P/N	Marking code
MMBT4401	2X

Electrical characteristic curves

Fig.1 Power Dissipation vs. Ambient Temperature

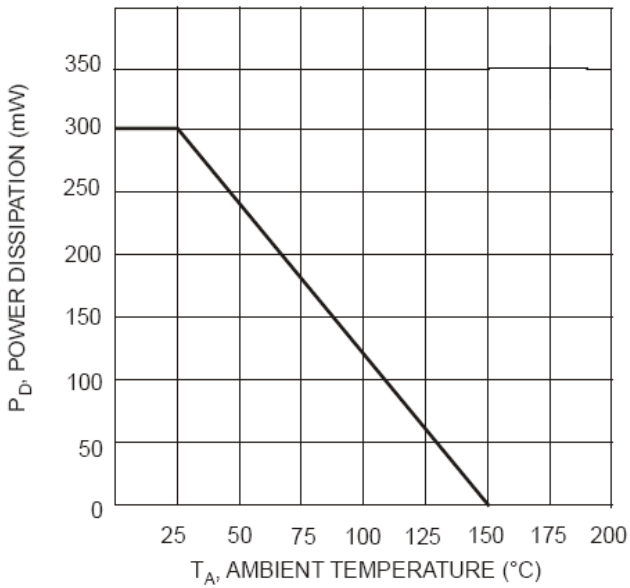


Fig.2 DC Current Gain vs. Collector Current

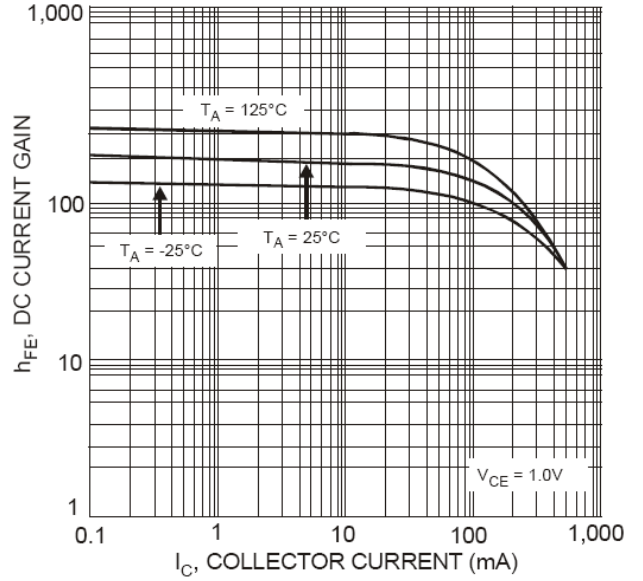


Fig.3 Typical Capacitance

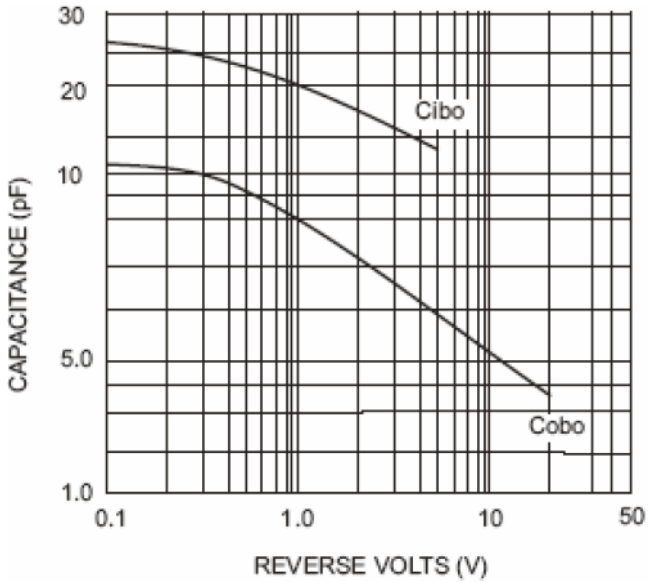


Fig.4 Collector Saturation Region

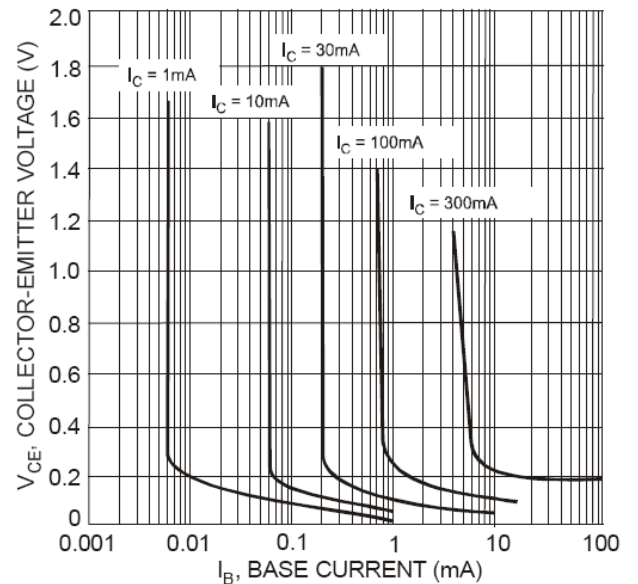


Fig.5 Collector Emitter Saturation Voltage vs. Collector Current

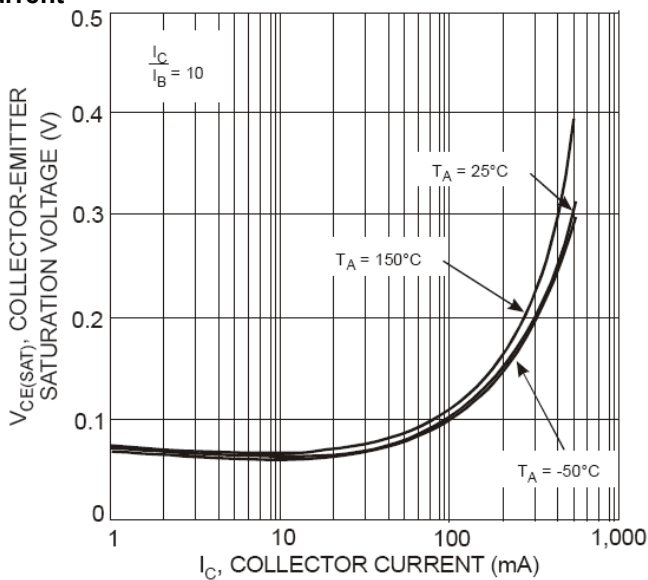
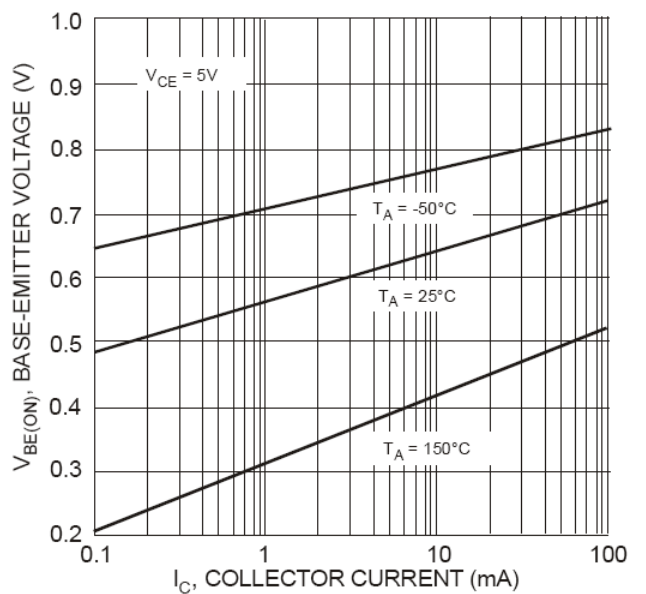


Fig.6 Base-Emitter Voltage vs. Collector Current



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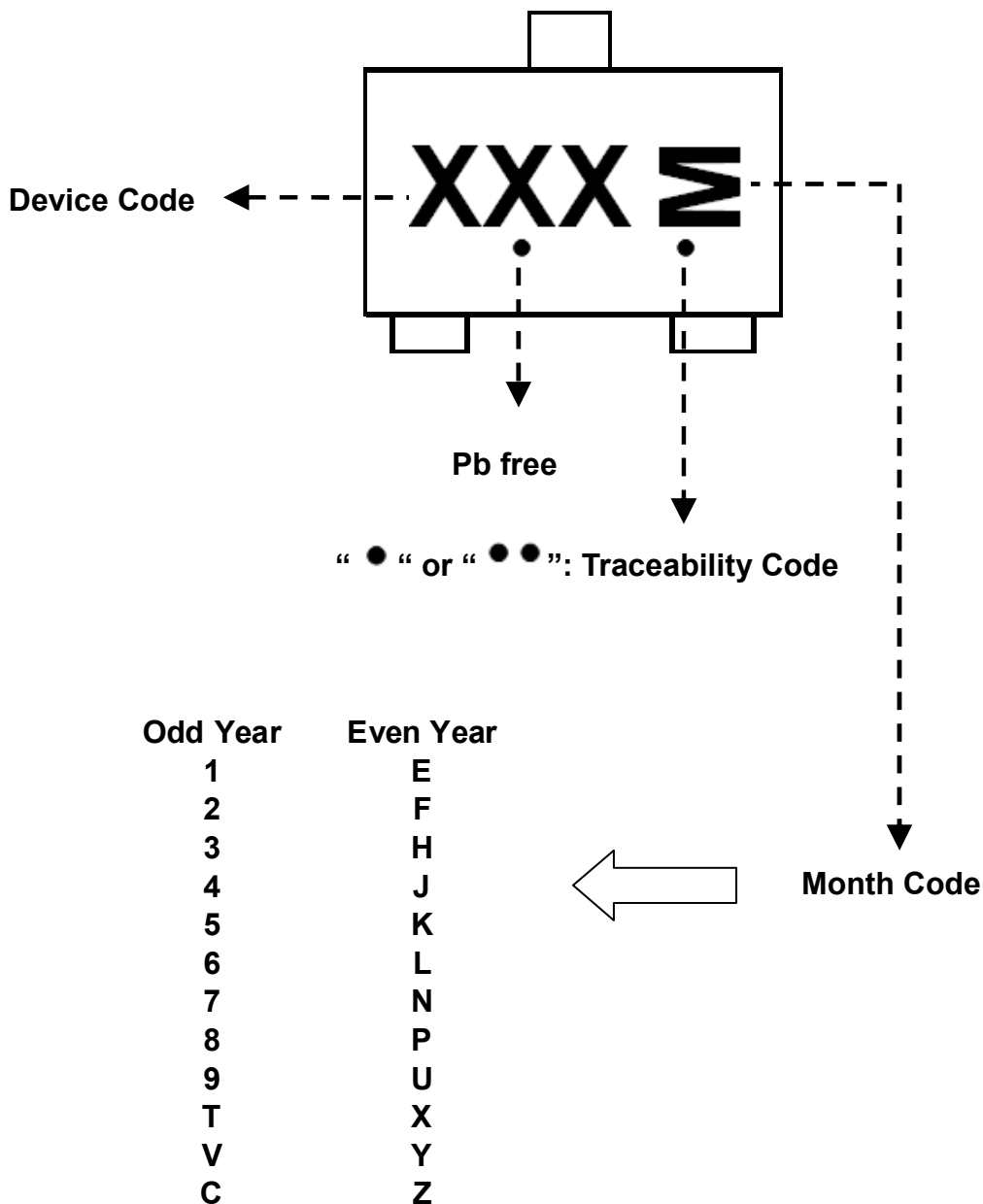
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New Marking Rule Notification

Range: In order to have well management in process control, the new marking rule is applied to small signal device including Switching Diode, Transistor and Schottky Diode.

Package: SOT-23 / SOT-323 / SOT-523



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