

NPN Plastic-Encapsulate Transistor

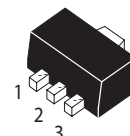
 Lead(Pb)-Free

Features:

*Low Collector-Emitter Saturation Voltage

*High Breakdown Voltage

SOT-89



1. BASE
2. COLLECTOR
3. EMITTER

Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	305	Vdc
Collector-Base Voltage	V_{CBO}	310	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Collector Current-Continuous	I_C	200	mAdc
Collector Current-Pulsed	I_{CM}	500	mAdc

Thermal Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Characteristics	Symbol	Max	Unit
Collector Power Dissipation	P_C	500	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	250	$^{\circ}\text{C}/\text{W}$
Junction and Storage, Temperature Range	$T_{J,Tstg}$	-55 to +150	$^{\circ}\text{C}$

Device Marking

MXTA42=A42

Characteristics	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage ($I_C=1.0\text{ mAdc}, I_B=0$)	$V_{(BR)CEO}$	305	-	Vdc
Collector-Base Breakdown Voltage ($I_C=100\text{ }\mu\text{Adc}, I_E=0$)	$V_{(BR)CBO}$	310	-	Vdc
Emitter-Base Breakdown Voltage ($I_E=100\text{ }\mu\text{Adc}, I_C=0$)	$V_{(BR)EBO}$	5.0	-	Vdc
Collector Cutoff Current ($V_{CB}=200\text{ Vdc}, I_E=0$)	I_{CBO}	-	0.25	μAdc
Collector Cutoff Current ($V_{CE}=200\text{ Vdc}, I_B=0$) ($V_{CE}=300\text{ Vdc}, I_B=0$)	I_{CEO}	-	0.25 5	μAdc
Emitter Cutoff Current ($V_{EB}=5.0\text{ Vdc}, I_C=0$)	I_{EBO}	-	0.1	μAdc

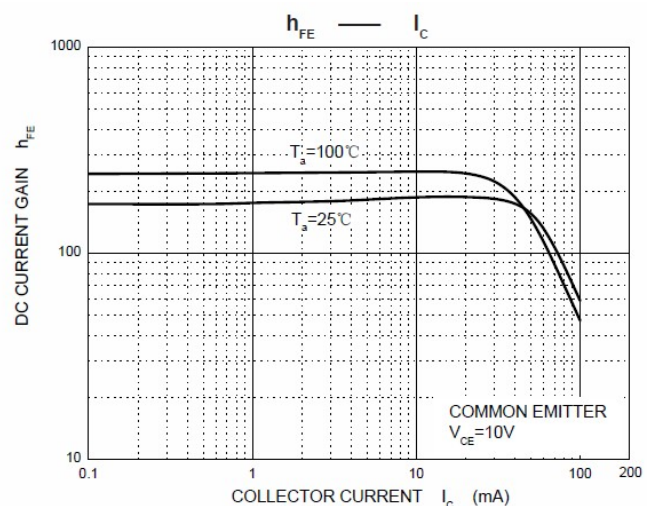
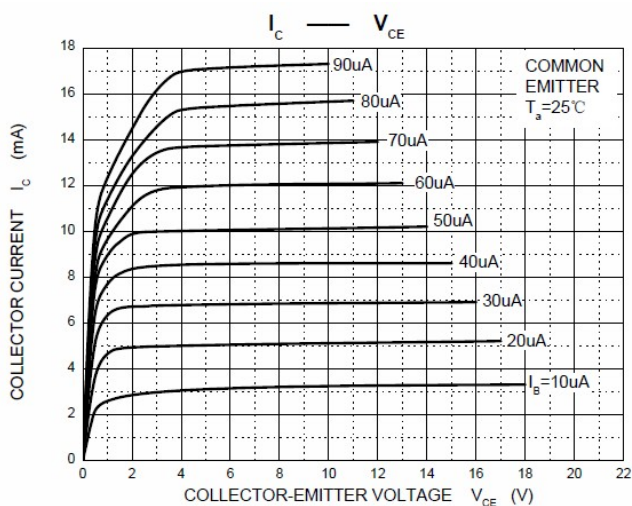
ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted) (Continued)

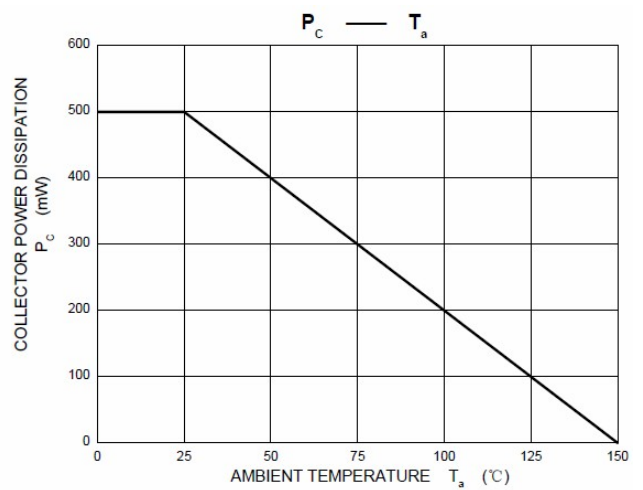
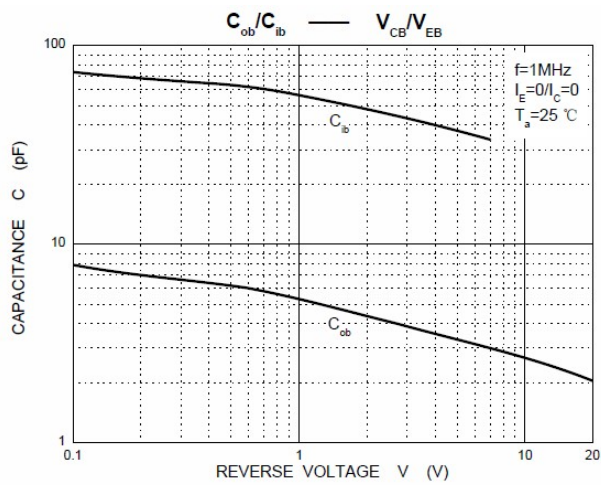
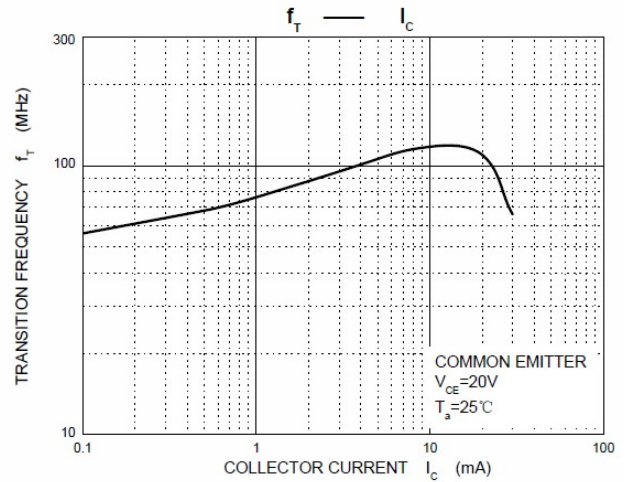
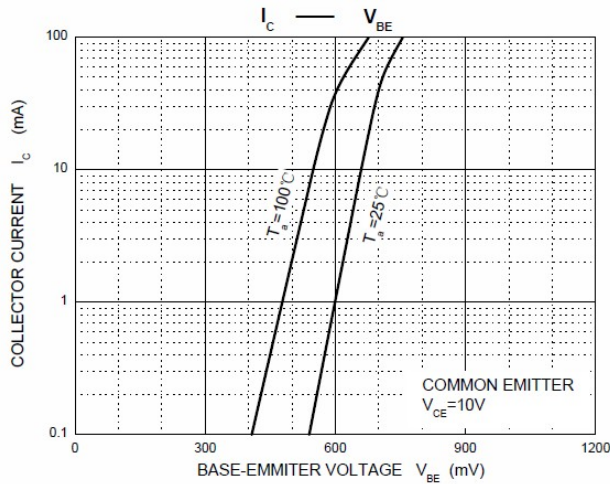
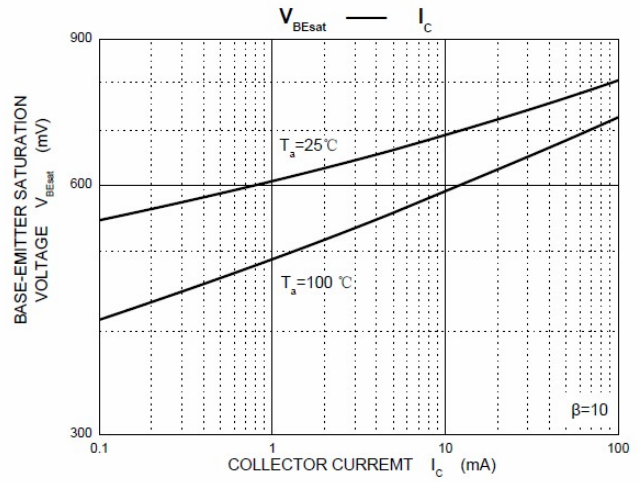
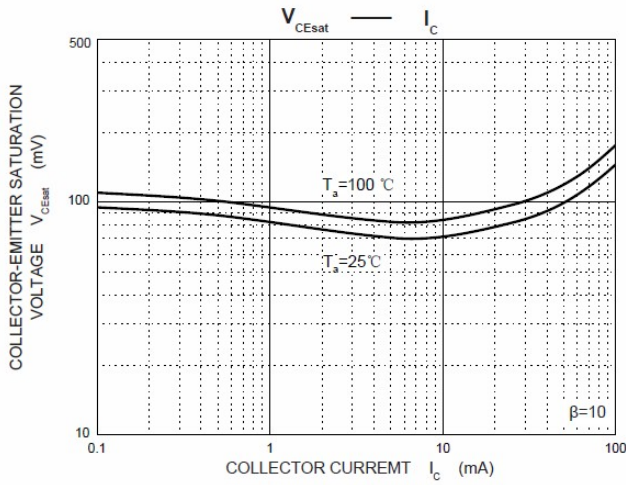
Characteristics	Symbol	Min	Max	Unit
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ON CHARACTERISTICS

DC Current Gain ($I_C = 1 \text{ mA}$, $V_{CE} = 10 \text{ Vdc}$) ($I_C = 10 \text{ mA}$, $V_{CE} = 10 \text{ Vdc}$) ($I_C = 30 \text{ mA}$, $V_{CE} = 10 \text{ Vdc}$)	$h_{FE(1)}$ $h_{FE(2)}$ $h_{FE(3)}$	60 100 75	- 300 -	-
Collector-Emitter Saturation Voltage ($I_C = 20 \text{ mA}$, $I_B = 2 \text{ mA}$)	$V_{CE(sat)}$	-	0.2	Vdc
Base-Emitter Saturation Voltage ($I_C = 20 \text{ mA}$, $I_B = 2 \text{ mA}$)	$V_{BE(sat)}$	-	0.9	Vdc
Transition Frequency ($V_{CE} = 20 \text{ Vdc}$, $I_C = 10 \text{ mA}$, $f = 30 \text{ MHz}$)	f_T	50	-	MHz

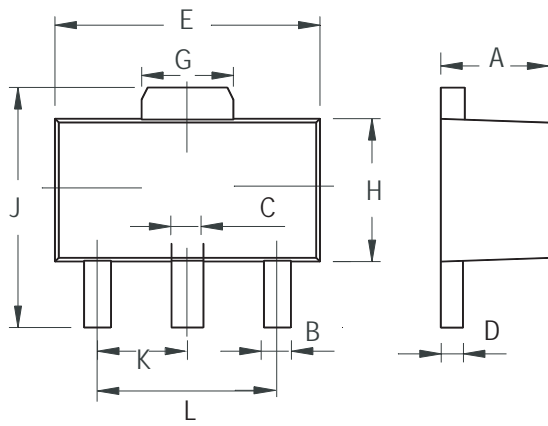
Electrical Characteristic curves ($T_A=25^\circ\text{C}$)





SOT-89 Outline Dimensions

unit:mm



SOT-89		
Dim	Min	Max
A	1.400	1.600
B	0.320	0.520
C	0.360	0.560
D	0.350	0.440
E	4.400	4.600
G	1.400	1.800
H	2.300	2.600
J	3.940	4.250
K	1.500TYP	
L	2.900	3.100