

FEATURES

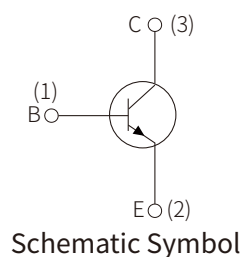
- | For Switching and Amplifier Applications
- | Complementary to MMBTA56
- | Power Dissipation of 300mW
- | High Stability and High Reliability

MECHANICAL DATA

- | SOT-23 small outline plastic package
- | Epoxy UL: 94V-0
- | Mounting position: Any

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003



MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

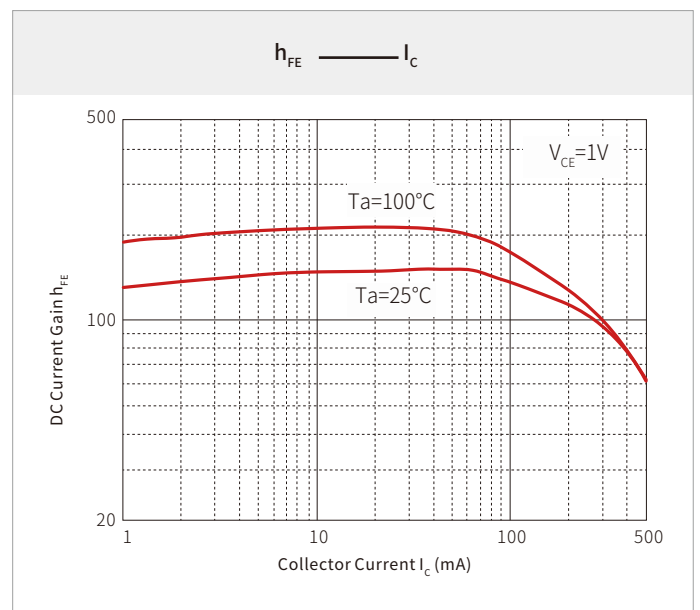
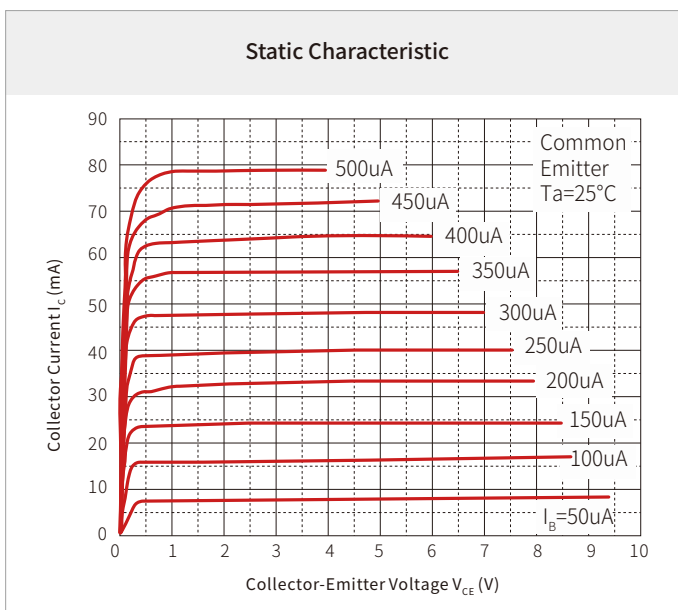
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	
Emitter-Base Voltage	V_{EBO}	4	
Collector Current	I_C	500	mA
Collector Power Dissipation	P_C	300	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	416	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^{\circ}\text{C}$

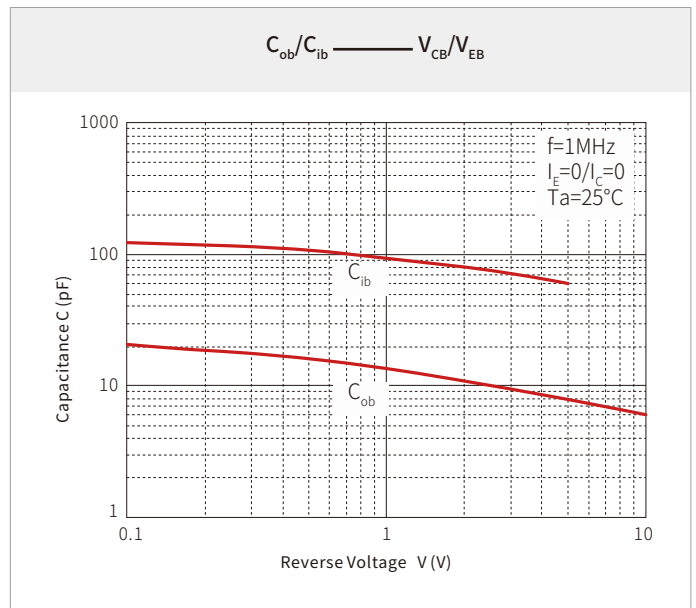
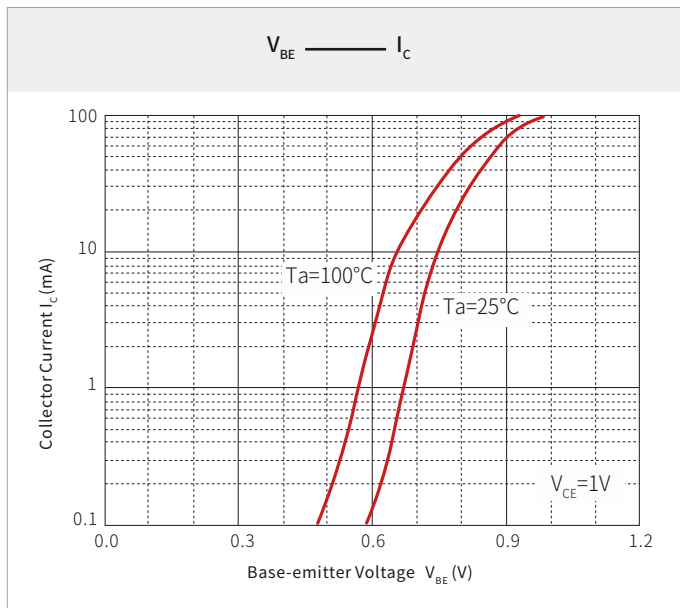
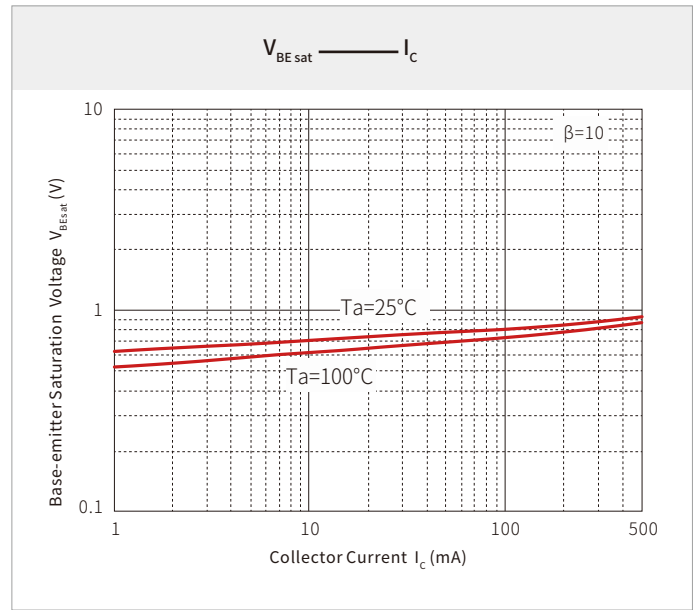
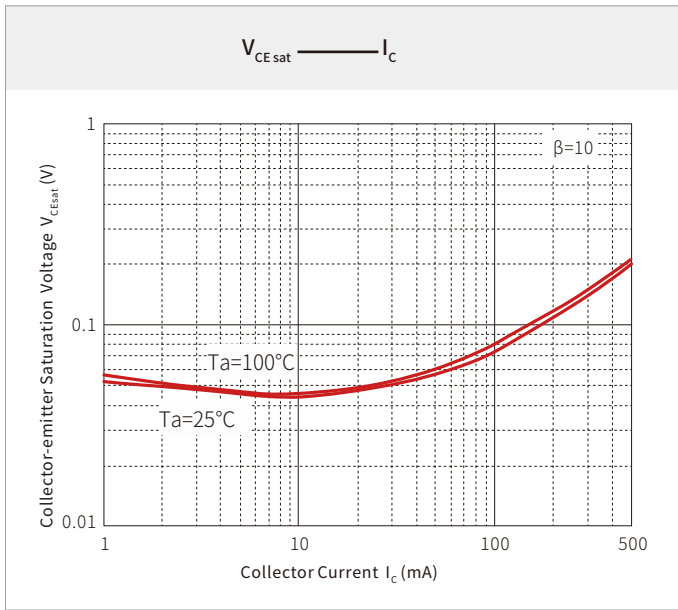
ELECTRICAL CHARACTERISTICS (T_A=25°C)

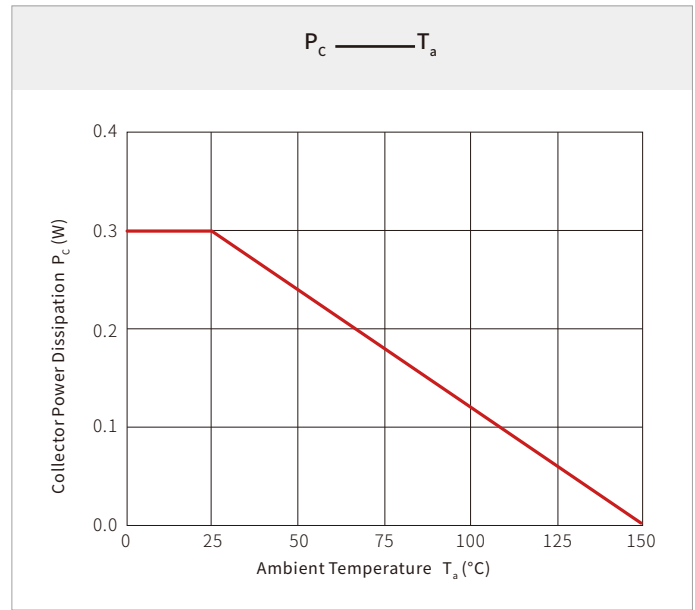
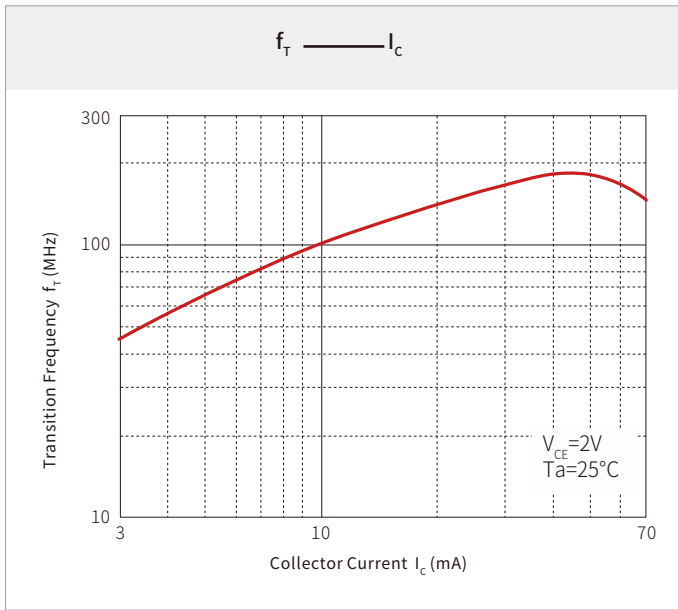
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	80			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	80			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	4			
Collector cut-off current	I_{CEO}	$V_{CE}=60V, I_B=0$			1.0	μA
Collector cut-off current	I_{CBO}	$V_{CB}=80V, I_E=0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=3V, I_C=0$			100	
DC current gain	$h_{FE(1)*}$	$V_{CE}=1V, I_C=10mA$	100		400	
	$h_{FE(2)*}$	$V_{CE}=1V, I_C=100mA$	100			
Collector-emitter saturation voltage	$V_{CE(sat)*}$	$I_C=100mA, I_B=10mA$			0.25	V
Base-emitter saturation voltage	$V_{BE(sat)*}$	$I_C=100mA, I_B=10mA$			1.20	
Transition frequency	f_T	$V_{CE}=2V, I_C=10mA, f=100MHz$	100			MHz

*Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2.0\%$.

TYPICAL CHARACTERISTICS

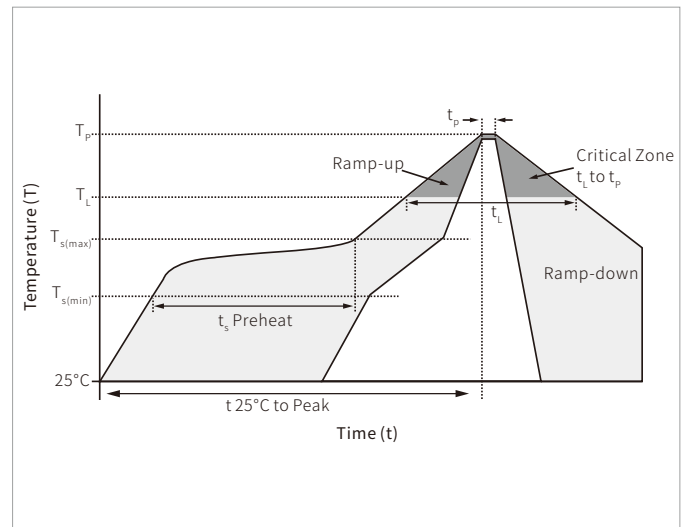




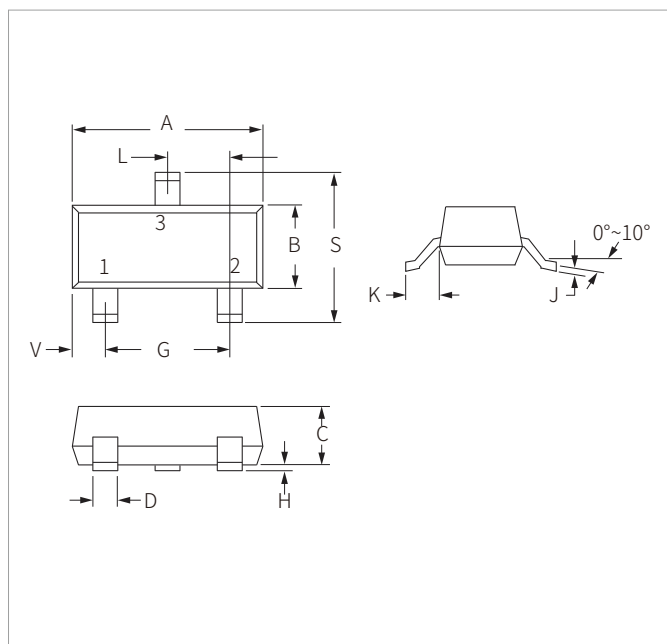


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

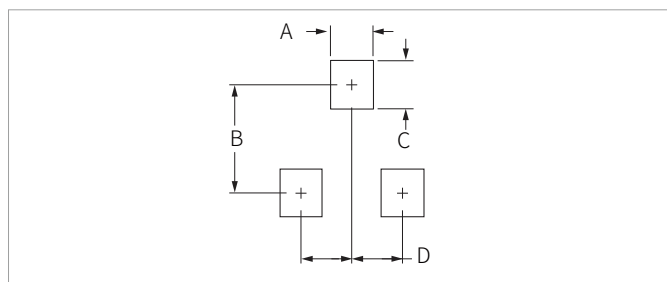


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.37	0.50	0.015	0.020
G	1.75	2.05	0.069	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.65	0.083	0.104
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
MMBTA06	SOT-23	3000PCS	7"

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