

FEATURES

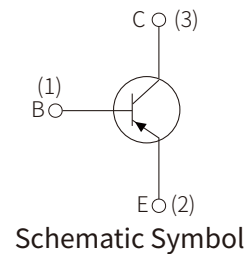
- | Power Dissipation of 300mW
- | High Stability and High Reliability
- | Meet AEC-Q101 Requirements

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°C)

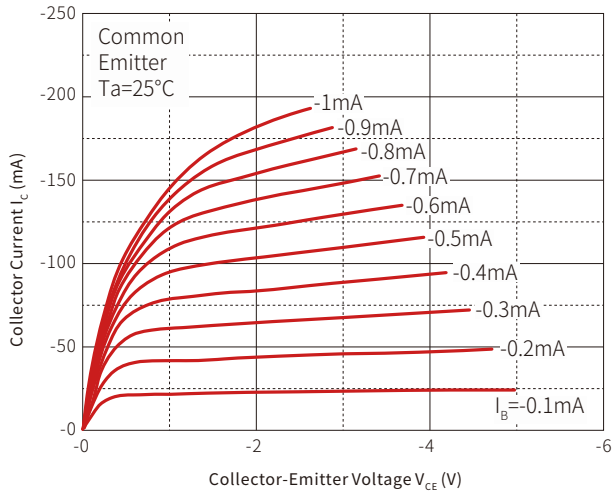
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	-40	V
Collector-Emitter Voltage	V _{CEO}	-40	
Emitter-Base Voltage	V _{EBO}	-5	
Collector Current	I _C	-600	mA
Collector Power Dissipation	P _C	300	mW
Thermal Resistance From Junction To Ambient	R _{θJA}	417	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55~+150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

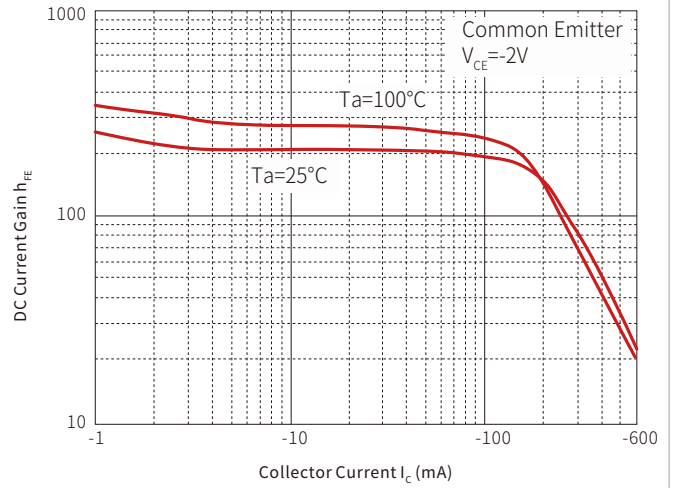
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =-100uA, I _E =0	-40			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =-1mA, I _B =0	-40			
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =-100uA, I _C =0	-5			
Collector cut-off current	I _{CEX}	V _{CE} =-35V, V _{EB(off)} =-0.4V			-100	nA
Collector cut-off current	I _{CBO}	V _{CB} =-35V, I _E =0			-100	
Emitter cut-off current	I _{EBO}	V _{EB} =-4V, I _C =0			-100	
DC current gain	h _{FE(1)}	V _{CE} =-1V, I _C =-0.1mA	30			
	h _{FE(2)}	V _{CE} =-1V, I _C =-1mA	60			
	h _{FE(3)}	V _{CE} =-1V, I _C =-10mA	100			
	h _{FE(4)}	V _{CE} =-2V, I _C =-150mA	100		300	
	h _{FE(5)}	V _{CE} =-2V, I _C =-500mA	20			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =-150mA, I _B =-15mA			-0.40	V
	V _{CE(sat)}	I _C =-500mA, I _B =-50mA			-0.75	
Base-emitter saturation voltage	V _{BE(sat)}	I _C =-150mA, I _B =-15mA			-0.95	
	V _{BE(sat)}	I _C =-500mA, I _B =-50mA			-1.30	
Transition frequency	f _T	V _{CE} =-10V, I _C =-20mA, f=100MHz	200			MHz
Delay time	td	V _{CC} =-30V, V _{BE(off)} =-0.5V I _C =-150mA, I _{B1} =-15mA			15	nS
Rise time	tr				20	
Storage time	ts	V _{CC} =-30V, I _C =-150mA, I _{B1} =I _{B2} =-15mA			225	
Fall time	tf				60	

TYPICAL CHARACTERISTICS

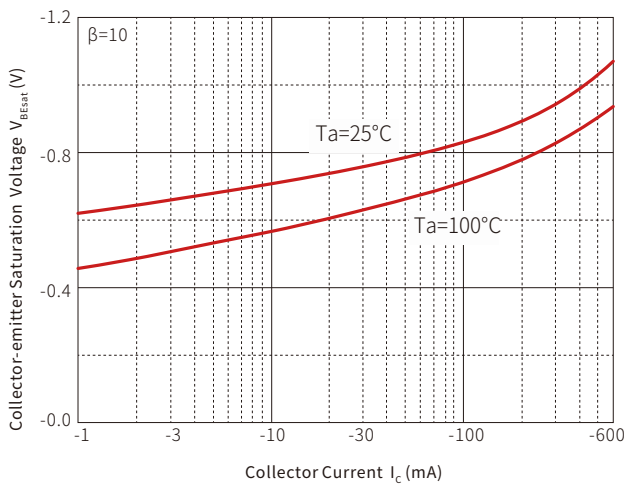
Static Characteristic



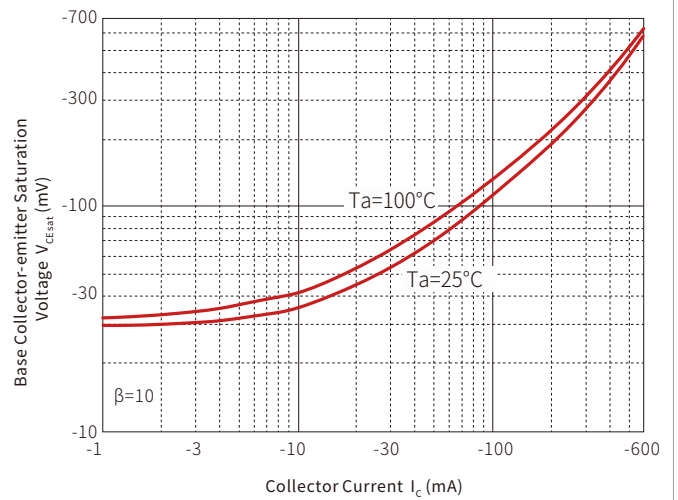
h_{FE} — I_C

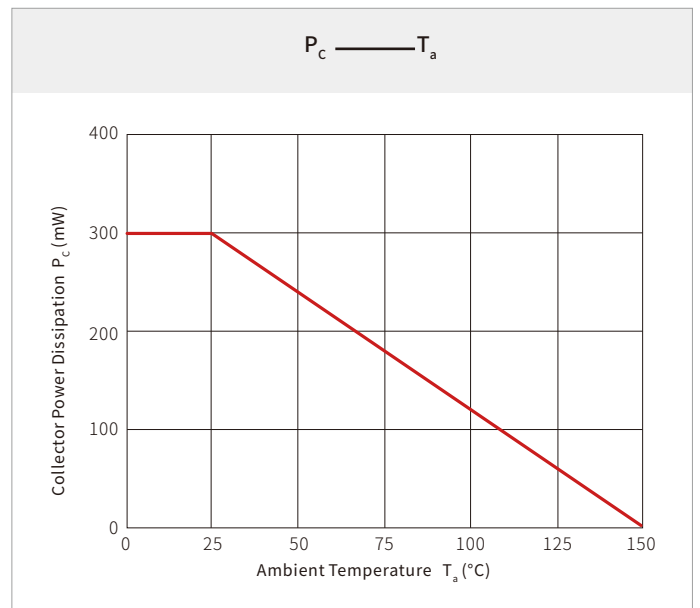
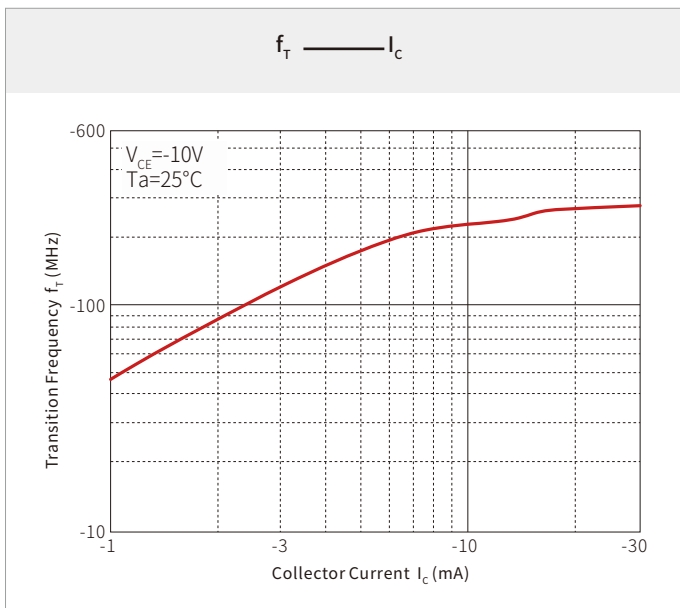
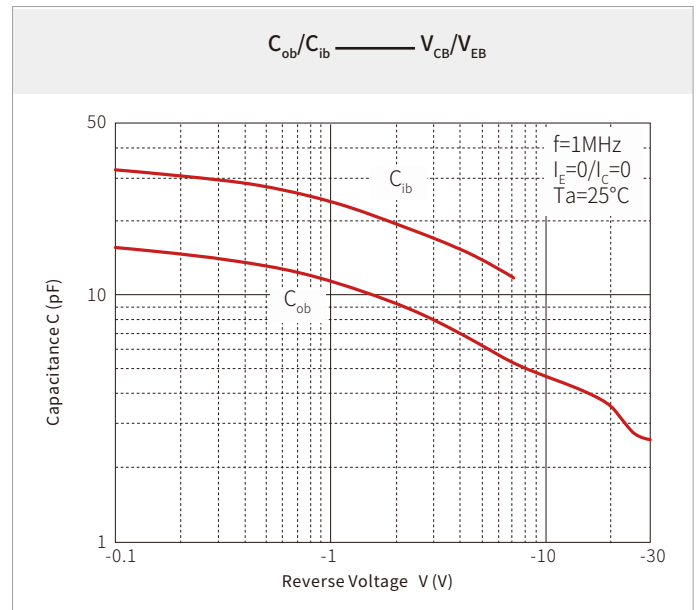
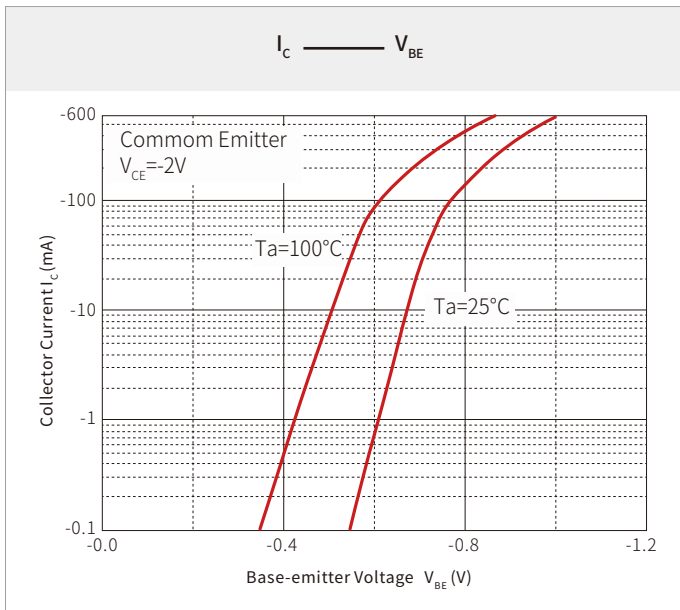


$V_{BE sat}$ — I_C



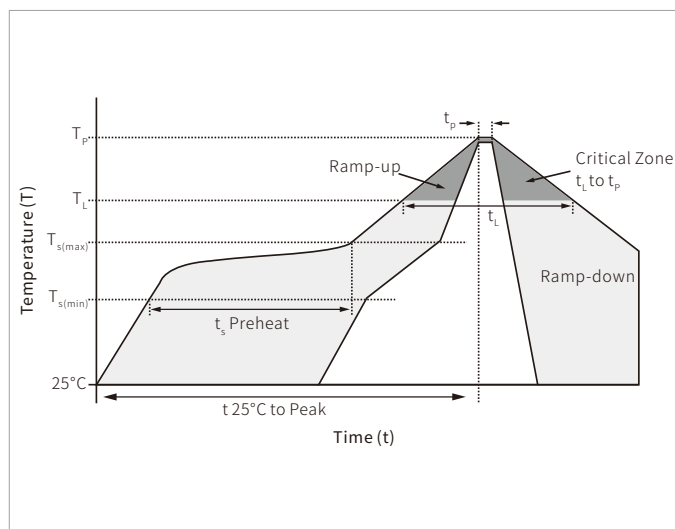
$V_{CE sat}$ — I_C



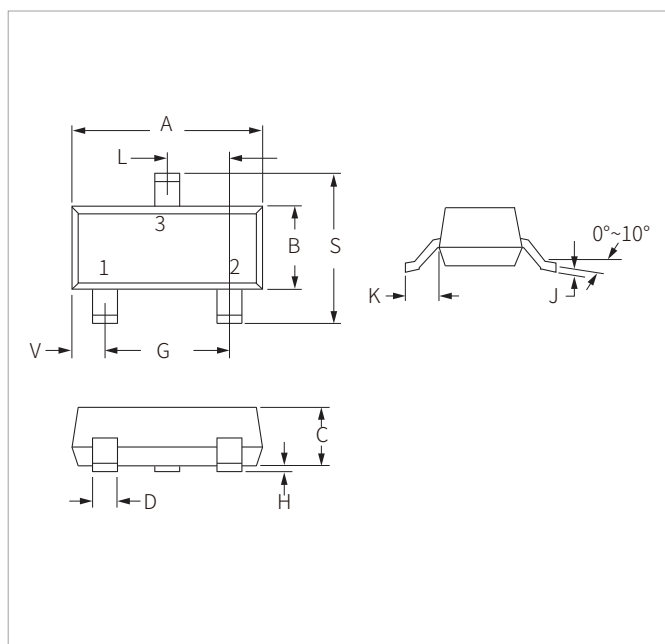


SOLDERING PARAMETERS

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

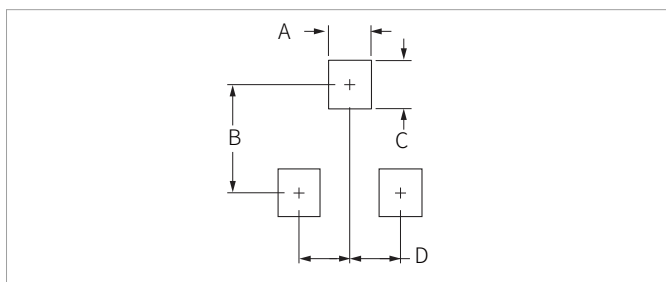


SOT-23 PACKAGE INFORMATION



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
MMBT4403Q	SOT-23	3000PCS	7"

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