

## FEATURES

| for general purpose application, darlington transistor

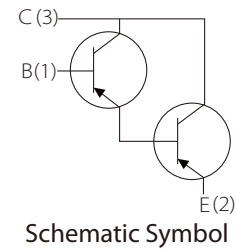


## MECHANICAL DATA

| SOT-23 small outline plastic package

| Epoxy UL: 94V-0

| Mounting position: Any



## APPROVALS

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

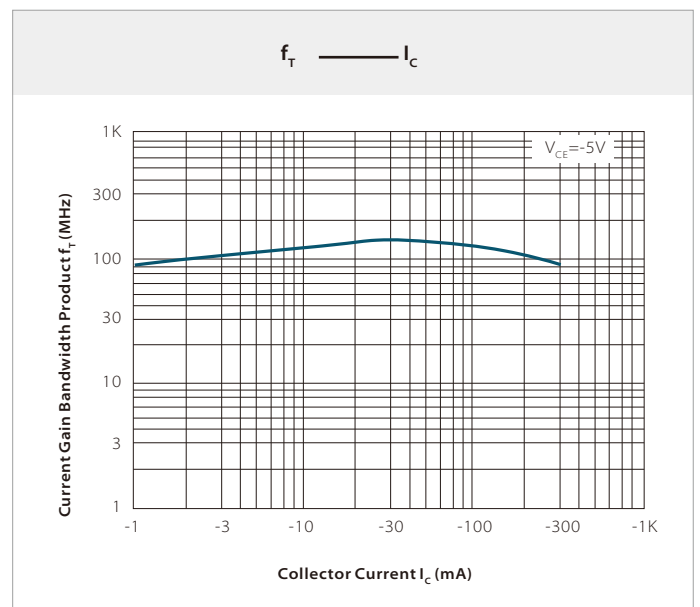
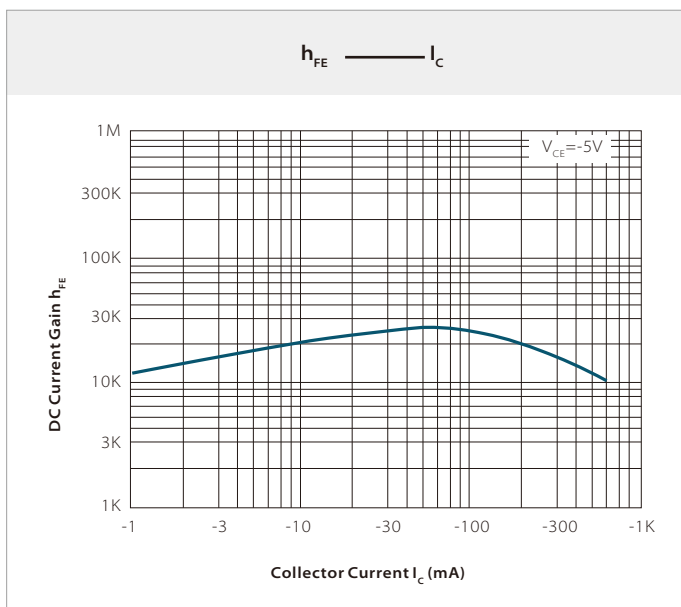
## MAXIMUM RATINGS (T<sub>A</sub> = 25°C )

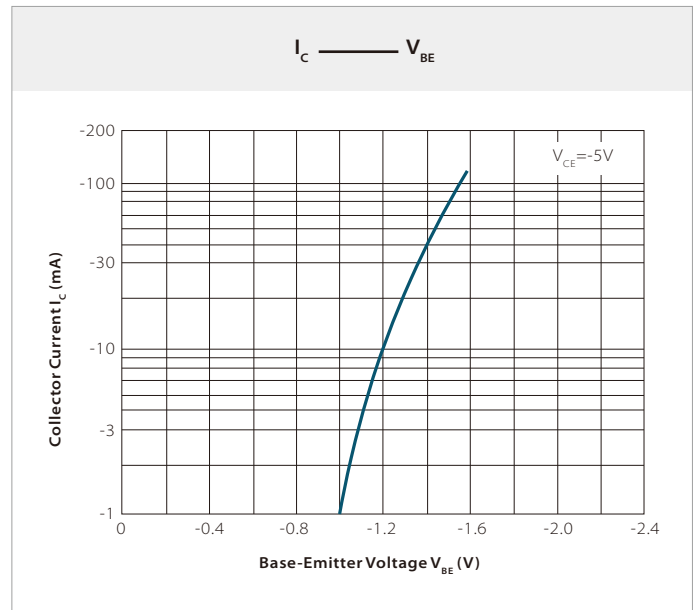
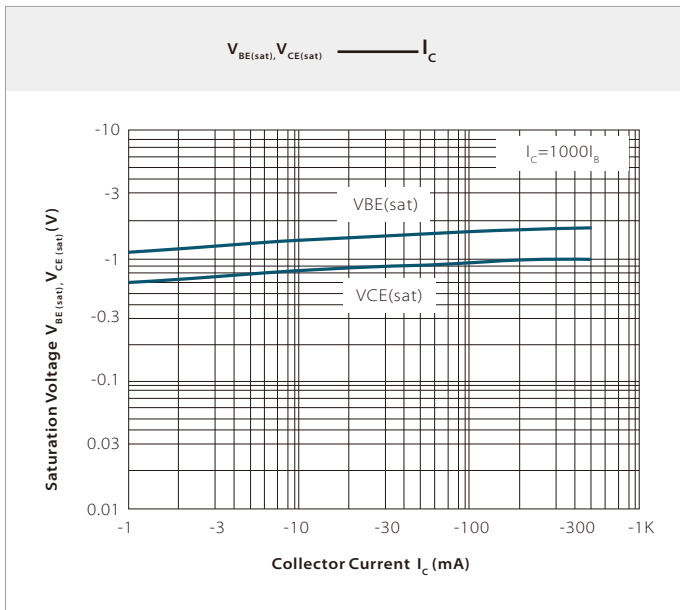
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-30	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-30	
Emitter-Base Voltage	V <sub>EBO</sub>	-10	
Collector Current	I <sub>C</sub>	-500	mA
Power Dissipation	P <sub>tot</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>STG</sub>	-55~+150	°C

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

Parameter	Symbol	Test Conditions		Min.	Typ.	Max.	Unit
DC Current Gain	h <sub>FE</sub>	MMBTA63	V <sub>CE</sub> =-5V, I <sub>C</sub> =-10mA	5000			V
		MMBTA64	V <sub>CE</sub> =-5V, I <sub>C</sub> =-10mA	10000			
		MMBTA63	V <sub>CE</sub> =-5V, I <sub>C</sub> =-100mA	10000			
		MMBTA64	V <sub>CE</sub> =-5V, I <sub>C</sub> =-100mA	20000			
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =-30V				-100	nA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =-10V				-100	
Collector Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-100μA		-30			V
Collector Emitter Breakdown Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-100mA, I <sub>B</sub> =-0.1mA				-1.5	
Base-emitter saturation voltage	V <sub>BE(on)</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-100mA				-2	
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =-5V, I <sub>E</sub> =10mA		125			MHz

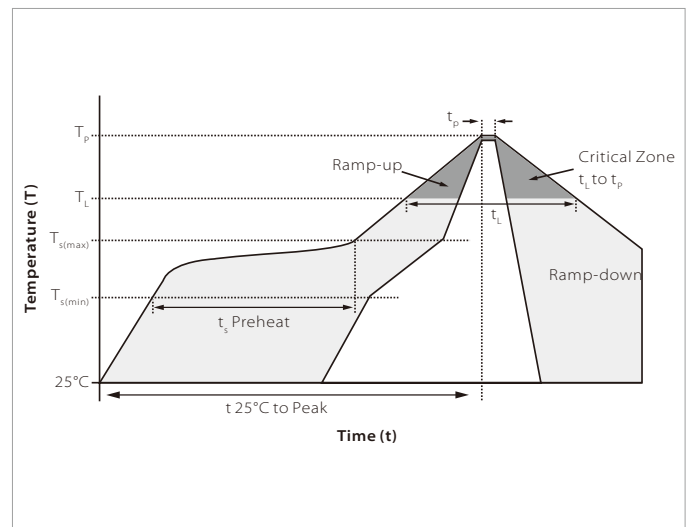
## TYPICAL CHARACTERISTICS



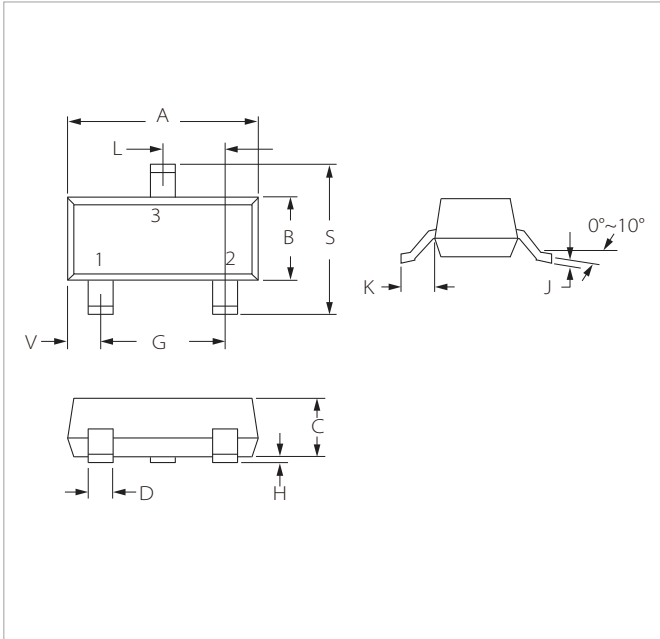


## SOLDERING PARAMETERS

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) ( $t_r$ )	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

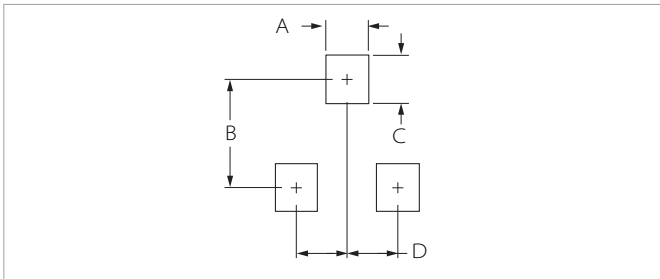


## SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.04	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.89	1.11	0.035	0.044
D	0.37	0.50	0.015	0.020
G	1.78	2.04	0.070	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	2.64	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	Marking	Component Package	QTY/Reel	Reel Size
MMBTA63	2U	SOT-23	3000PCS	7"
MMBTA64	2V			

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