Micro Commercial Components

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MMBTA63
MMBTA64

PNP Darlington Transistor

Features

- Halogen free available upon request by adding suffix "-HF"
- This device is designed for applications requiring extremely high current gain at 500mA.
- Marking : MMBTA63: 2U
  MMBTA64: 2V
- Case Material:Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1

Maximum Ratings

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	30	V
V_{CBO}	Collector-Base Voltage	30	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current, Continuous	0.5	A
T_J	Operating Junction Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

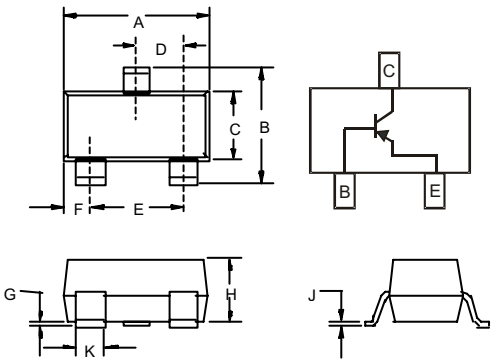
Thermal Characteristics

Symbol	Rating	Max	Unit
P_C	Collector Power Dissipation*	300	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	417	°C/W

Electrical Characteristics @ 25°C Unless Otherwise Specified

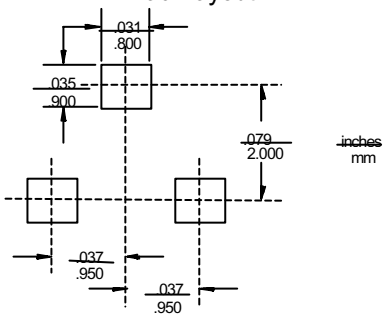
Symbol	Parameter		Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-base breakdown voltage (I_C=100uAdc, I_E=0)		30	---	Vdc
$V_{(BR)CBO}$	Collector-emitter breakdown voltage (I_C=100uAdc, I_B=0)		30	---	Vdc
$V_{(BR)EBO}$	Emitter-base breakdown voltage (I_E=100uAdc, I_C=0)		10	---	Vdc
I_{CBO}	Collector Cutoff Current (V_{CB}=30Vdc, I_E=0)		---	100	nAdc
I_{EBO}	Emitter Cutoff Current (V_{EB}=10Vdc, I_C=0)		---	100	nAdc
ON CHARACTERISTICS					
h_{FE1}	DC Current Gain (V_{CE}=5.0Vdc, I_C=10mAdc)	MMBTA63 MMBTA64	5000 10000	--- ---	--- ---
h_{FE2}	DC Current Gain (V_{CE}=5.0Vdc, I_C=100mA)	MMBTA63 MMBTA64	10000 20000	--- ---	--- ---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=100mAdc, I_B=0.1mAdc)		---	1.5	Vdc
$V_{BE(sat)}$	Base-Emitter On Voltage (I_C=100mAdc, V_{CE}=5.0Vdc)		---	2.0	Vdc
f_T	Current-Gain—Bandwidth Product (I_C=10mAdc, V_{CE}=5.0Vdc, f=100MHz)		125	---	MHz

SOT-23



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

Suggested Solder Pad Layout



Typical Characteristics

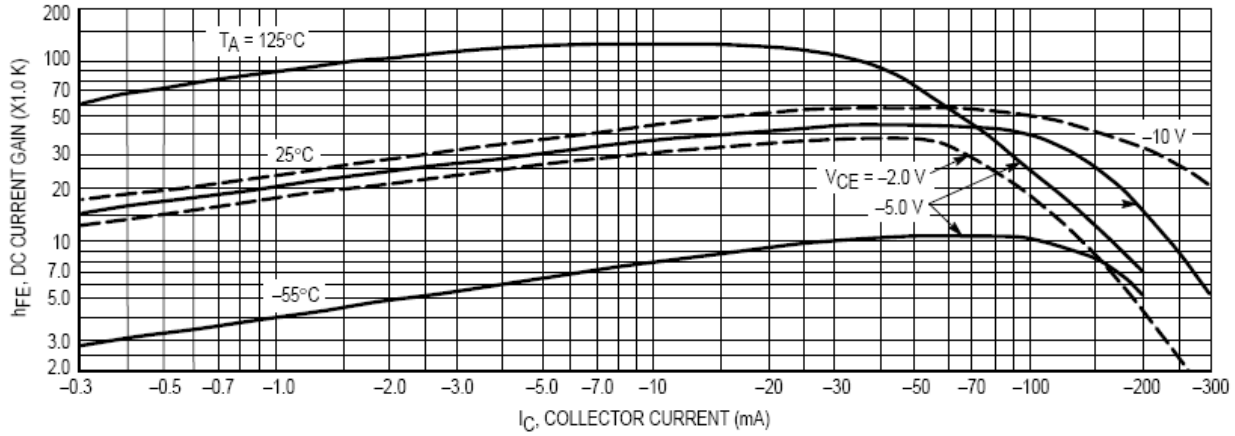


Figure 1. DC Current Gain

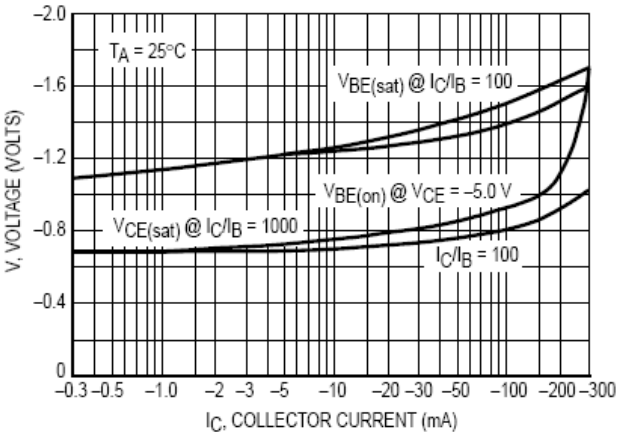


Figure 2. "On" Voltage

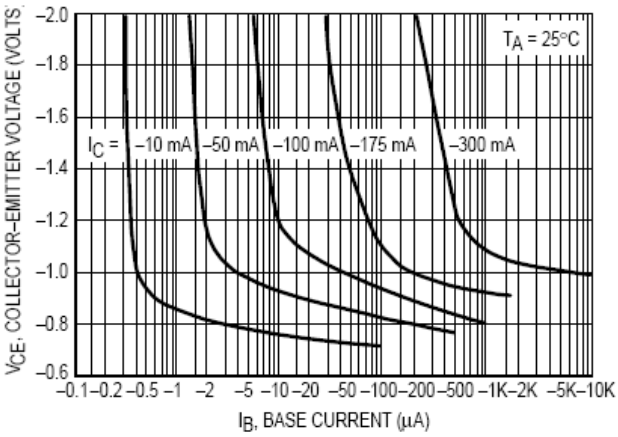


Figure 3. Collector Saturation Region

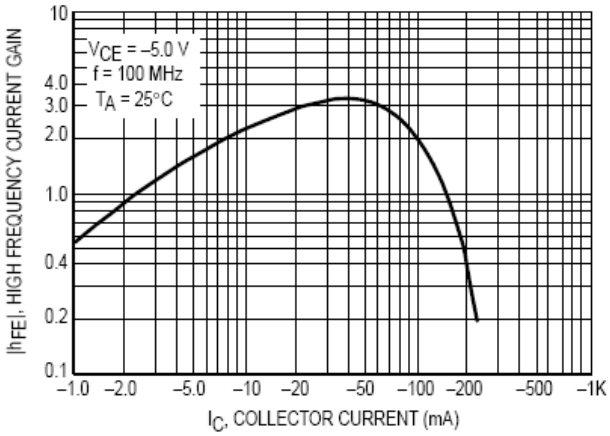


Figure 4. High Frequency Current Gain

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Ordering Information

Device	Packing
(Part Number)-TP	Tape&Reel;3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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