

MMBTA28

NPN Surface Mount Darlington Transistor

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- High Current Gain
- Ideal for Medium Power Amplification and Switching
- Epitaxial Planar Die Construction
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: 3SS
- Halogen free available upon request by adding suffix "-HF"

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ($I_C=1.0mA$, $I_B=0$)	80.0		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=100\mu A$, $I_E=0$)	80.0		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=100\mu A$, $I_C=0$)	12.0		Vdc
I_{CBO}	Collector Cutoff Current ($V_{CB}=60Vdc$, $I_E=0$)		100	nA
I_{EBO}	Emitter Cutoff Current ($V_{EB}=10Vdc$, $I_C=0$)		100	nA

ON CHARACTERISTICS

h_{FE}	DC Current Gain* ($I_C=10mA$, $V_{CE}=5Vdc$) ($I_C=100mA$, $V_{CE}=5Vdc$)	10,000 10,000		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=100mA$, $I_B=100\mu A$)		1.5	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=100mA$, $V_{CE}=5.0V$)		2.0	Vdc

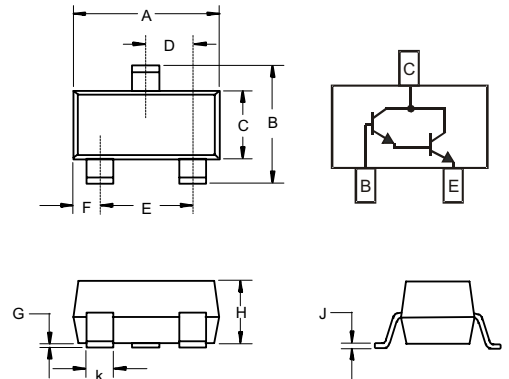
SMALL-SIGNAL CHARACTERISTICS

f_T	Current Gain-Bandwidth Product ($I_C=10mA$, $V_{CE}=5.0Vdc$, $f=100MHz$)	125		MHz
C_{cb}	Collector-Emitter Capacitance ($V_{CB}=10Vdc$, $I_E=0$, $f=1.0MHz$)		8.0	pF

THERMAL CHARACTERISTICS

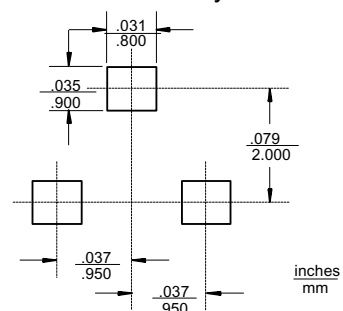
Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, $T_A = 25^\circ C$	P_D	300	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ C/W$
Junction and Storage Temperature	T_J, T_{stg}	-55 to +150	$^\circ C$

SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.118	2.80	3.00	
B	.090	.104	2.30	2.50	
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	.043	.90	1.10	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

Suggested Solder Pad Layout



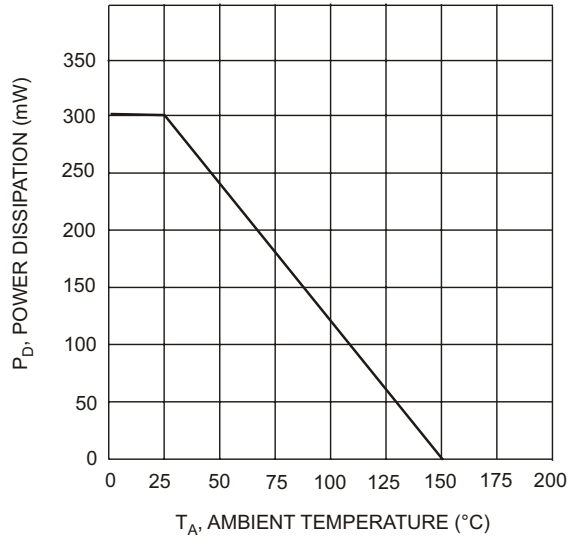


Fig. 1, Max Power Dissipation vs Ambient Temperature

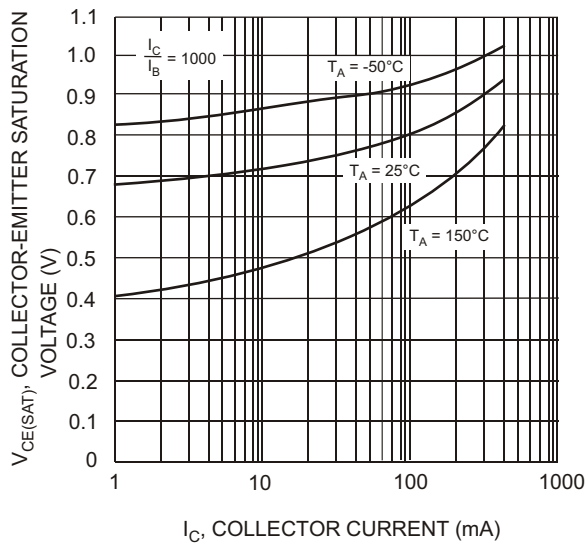
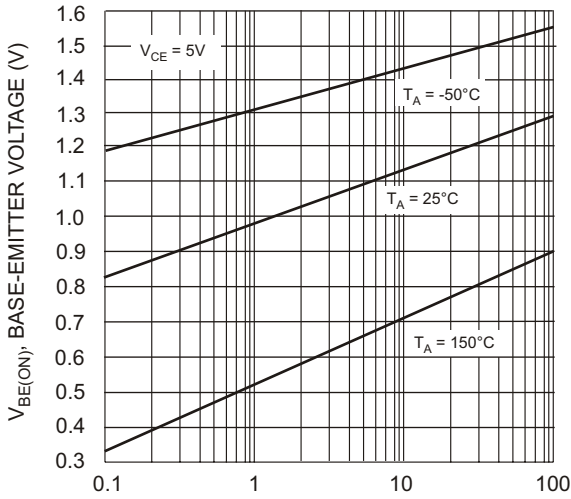
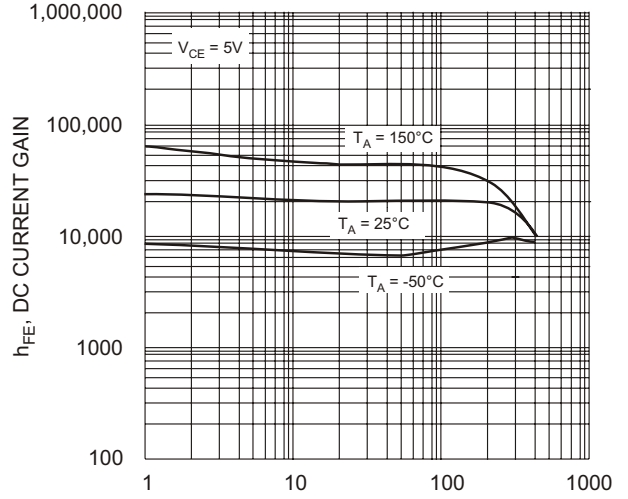


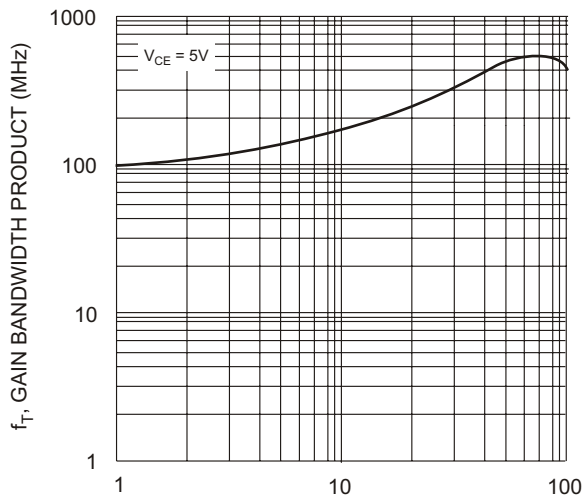
Fig. 2 Typical Collector-Emitter Saturation Voltage vs. Collector Current



I_C , COLLECTOR CURRENT (mA)
 Fig. 3 Typical Base-Emitter Voltage vs. Collector Current



I_C , COLLECTOR CURRENT (mA)
 Fig. 4 Typical DC Current Gain vs. Collector Current



COLLECTOR CURRENT I_C (mA)
 Fig. 5 Typical Gain Bandwidth Product vs. Collector Current



Micro Commercial Components

Ordering Information :

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

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

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