

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

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 ($V_{CB}=60V$, $I_E=0$)		100	nA
I_{EBO}	Emitter Cutoff Current ($V_{EB}=10V$, $I_C=0$)		100	nA

ON CHARACTERISTICS

h_{FE}	DC Current Gain* ($I_C=10mA$, $V_{CE}=5V$) ($I_C=100mA$, $V_{CE}=5V$)	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

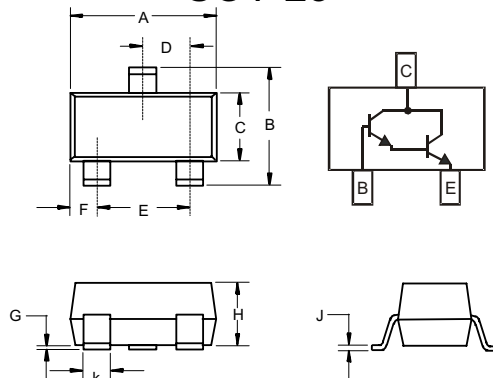
SMALL-SIGNAL CHARACTERISTICS

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

THERMAL CHARACTERISTICS

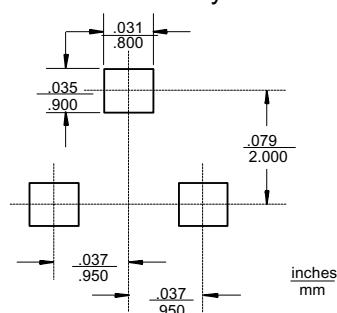
Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, $T_A = 25^\circ C$	P_D	300	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ C/W$
Junction and Storage Temperature	T_J, T_{stg}	-55 to +150	$^\circ C$

SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.118	2.80	3.00	
B	.090	.098	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



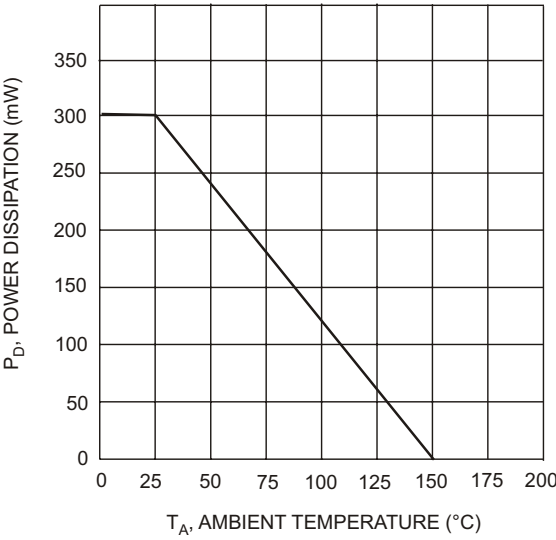


Fig. 1, Max Power Dissipation vs Ambient Temperature

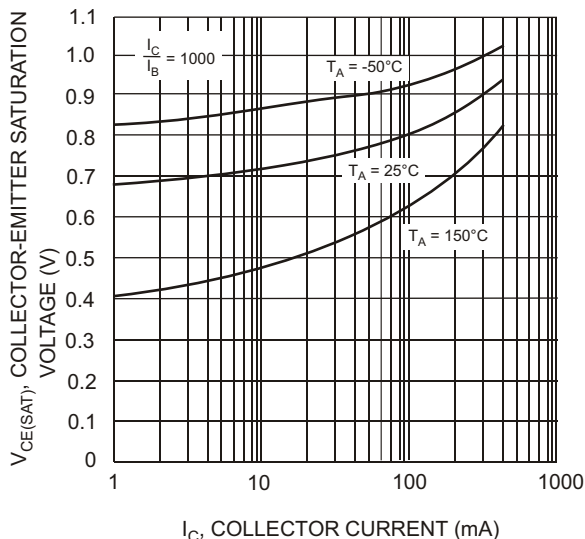
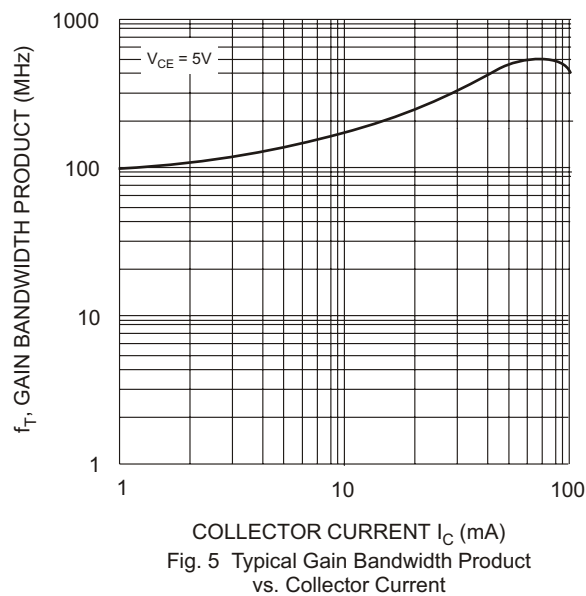
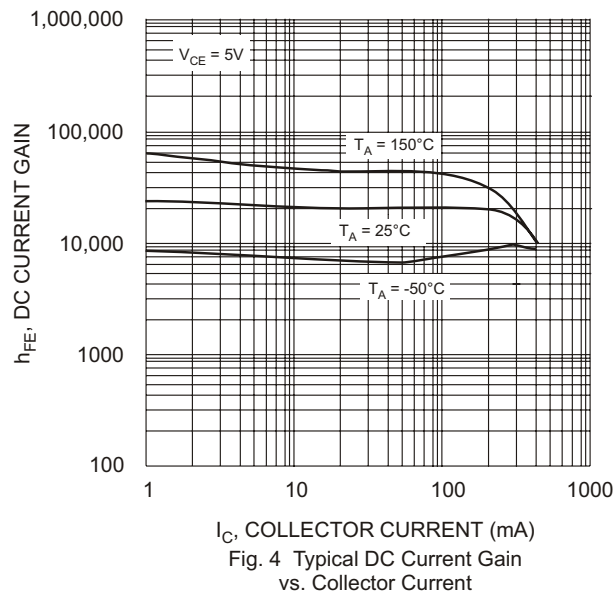
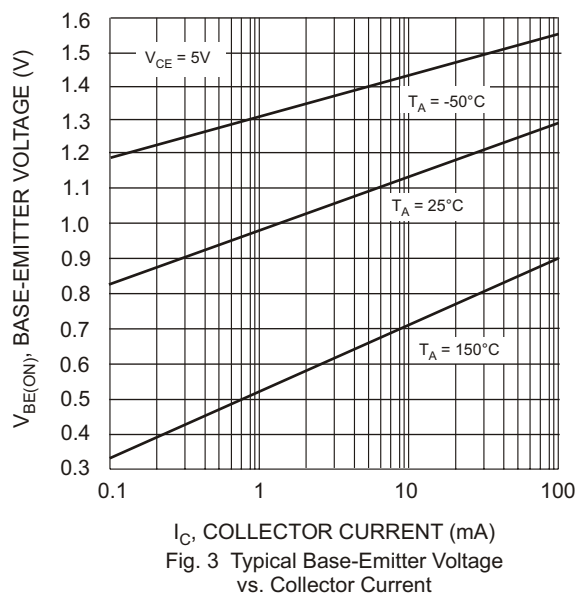


Fig. 2 Typical Collector-Emitter Saturation Voltage vs. Collector Current





Micro Commercial Components

Ordering Information :

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

IMPORTANT NOTICE

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. **Micro Commercial Components Corp.** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp.** and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

CUSTOMER AWARENESS

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

www.mccsemi.com