MMBTA28

NPN SURFACE MOUNT DARLINGTON TRANSISTOR

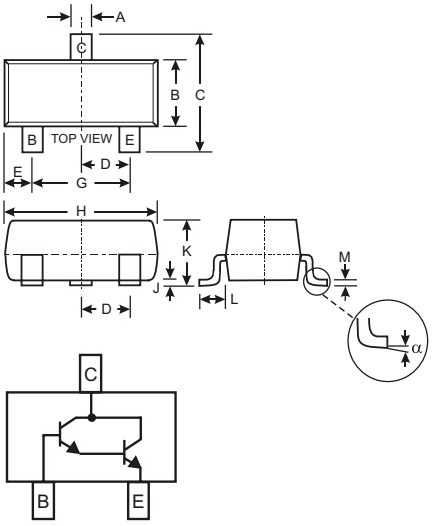
NEW PRODUCT

Features

- Epitaxial Planar Die Construction
- Ideal for Medium Power Amplification and Switching
- High Current Gain

Mechanical Data

- Case: SOT-23, Molded Plastic
- Case Material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking (See Page 2): K6R
- Weight: 0.008 grams (approx.)
- Ordering & Date Code Information: See Page 2



SOT-23		
Dim	**Min**	**Max**
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°
All Dimensions in mm		

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	MMBTA28	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	12	V
Collector Current - Continuous	I_C	500	mA
Power Dissipation	P_d	300	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Operating and Storage and Temperature Range	T_j, T_{STG}	-55 to +150	°C

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)					
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80	—	V	I_C = 100μA I_E = 0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	12	—	V	I_E = 100μA I_C = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	80	—	V	I_C = 100μA I_B = 0
Collector Cutoff Current	I_{CBO}	—	100	nA	V_{CB} = 60V, I_E = 0
Emitter Cutoff Current	I_{EBO}	—	100	nA	V_{EB} = 10V, I_C = 0
ON CHARACTERISTICS (Note 2)					
DC Current Gain	h_{FE}	10,000 10,000	—	—	I_C = 10mA, V_{CE} = 5.0V I_C = 100mA, V_{CE} = 5.0V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	1.5	V	I_C = 100mA, I_B = 100μA
Base- Emitter Saturation Voltage	$V_{BE(SAT)}$	—	2.0	V	I_C = 100mA, V_{CE} = 5.0V
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C_{obo}	8.0 Typical		pF	V_{CB} = 10V, f = 1.0MHz, I_E = 0
Input Capacitance	C_{ibo}	15 Typical		pF	V_{EB} = 0.5V, f = 1.0MHz, I_C = 0
Current Gain-Bandwidth Product	f_T	125	—	MHz	V_{CE} = 5.0V, I_C = 10mA, f = 100MHz

Notes: 1. Device mounted on FR-4 PCB, 1.6x1.6x0.06 nch pad layout as shown on Diodes Inc. suggested pad layout document AP02001 which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
2. Short duration test pulse used to minimize self-heating effect.

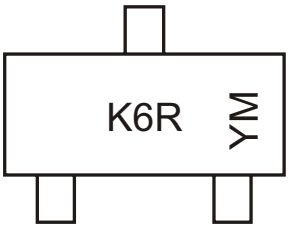
NEW PRODUCT

Ordering Information (Note 3)

Device	Packaging	Shipping
MMBTA28-7	SOT-23	3000/Tape & Reel

Notes: 3. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



K6R = Product Type Marking Code
YM = Date Code Marking
Y = Year ex: N = 2002
M = Month ex: 9 = September

Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009
Code	N	P	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

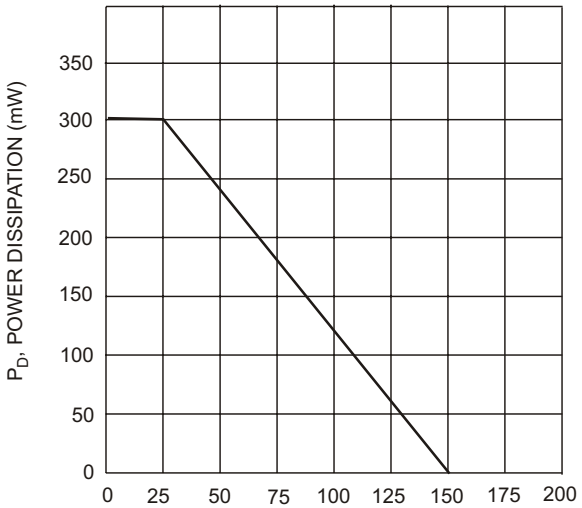


Fig. 1, Max Power Dissipation vs Ambient Temperature

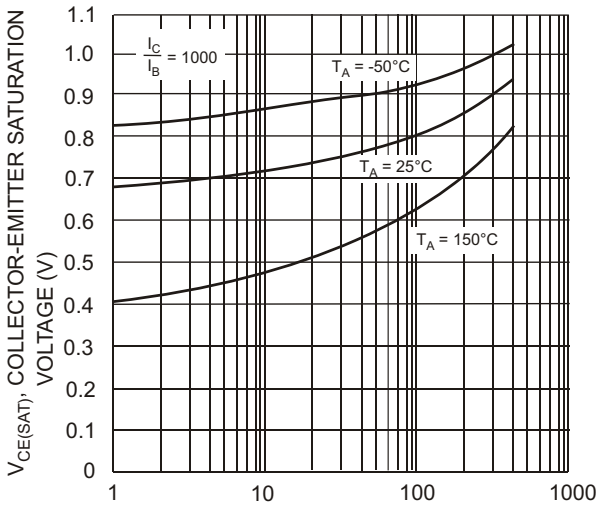


Fig. 2 Typical Collector-Emitter Saturation Voltage vs. Collector Current

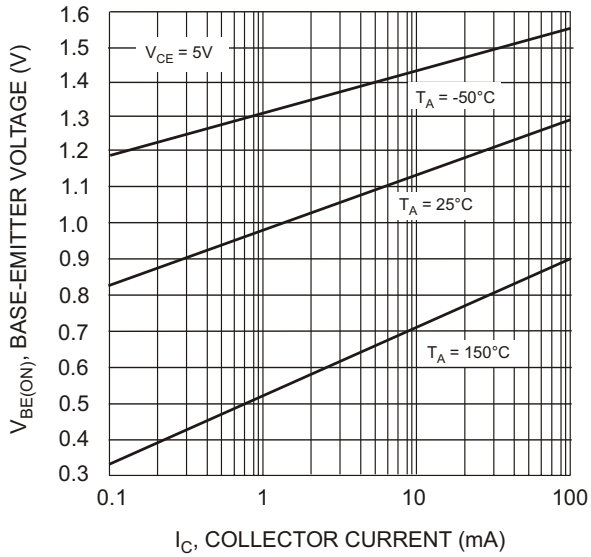


Fig. 3 Typical Base-Emitter Voltage vs. Collector Current

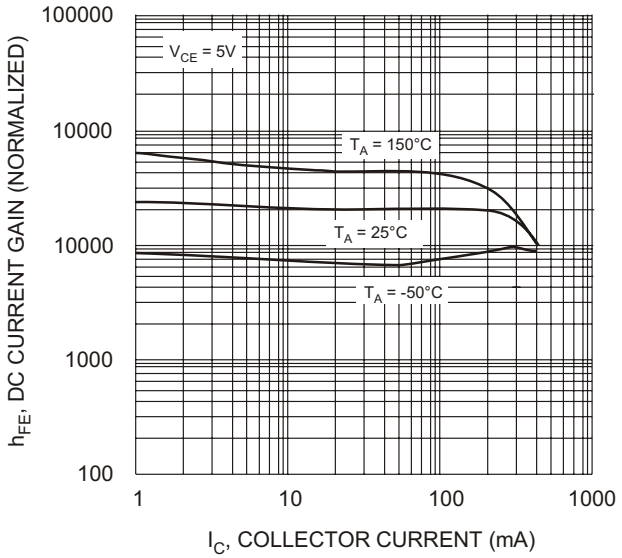


Fig. 4 Typical DC Current Gain vs. Collector Current

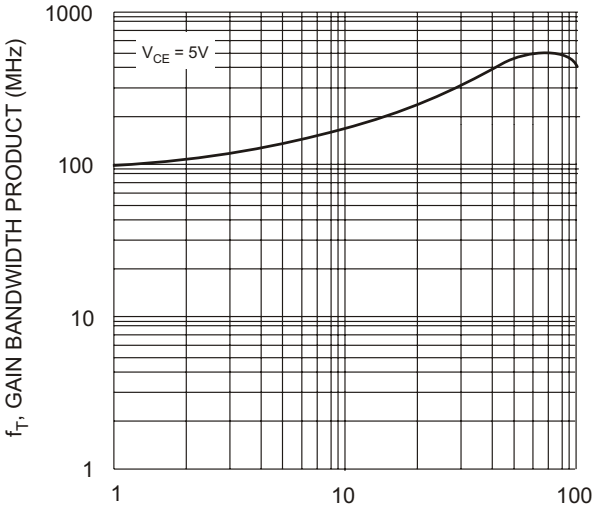


Fig. 5 Typical Gain Bandwidth Product vs. Collector Current