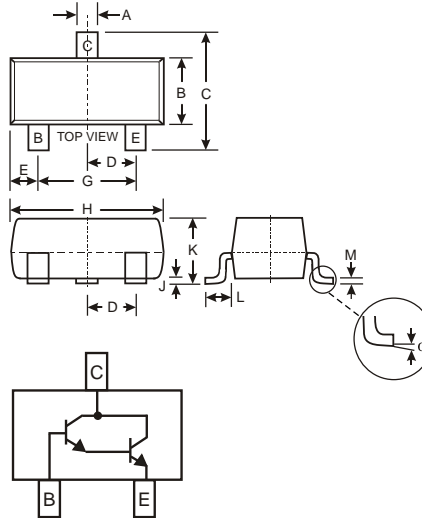


Features

- Epitaxial Planar Die Construction
- Ideal for Low Power Amplification and Switching
- High Current Gain
- **Lead Free/RoHS Compliant (Note 3)**

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking (See Page 3): K6R
- Ordering & Date Code Information: See Page 3
- Weight: 0.008 grams (approximate)



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
	0°	8°
All Dimensions in mm		

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	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 (Note 1)	P _d	300	mW
Thermal Resistance, Junction to Ambient (Note 1)	R _{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 _{CB0}		100	nA	V _{CB} = 60V, I _E = 0
	I _{CES}		500	nA	V _{CE} = 10V
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 inch 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 pulse test used to minimize self-heating effect.
 3. No purposefully added lead.

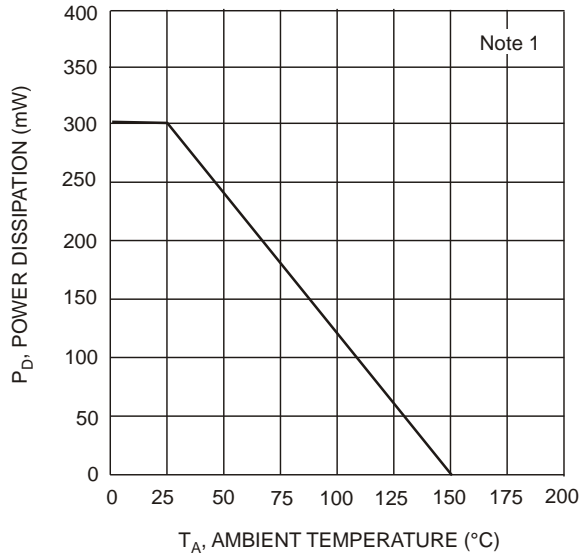


Fig. 1, Max Power Dissipation vs Ambient Temperature

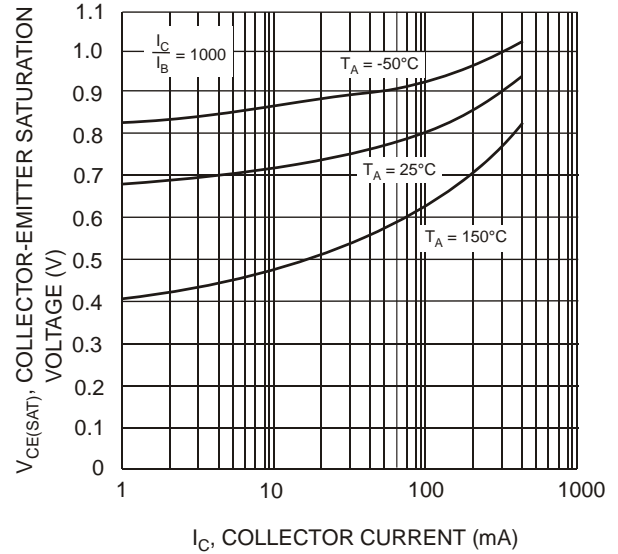


Fig. 2 Typical Collector-Emitter Saturation Voltage vs. Collector Current

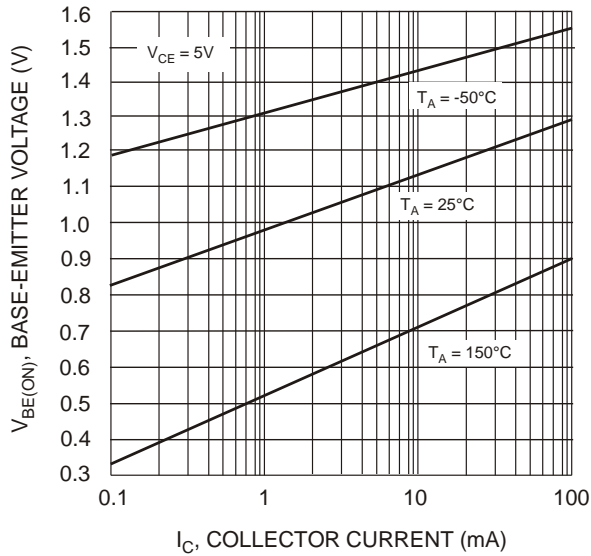


Fig. 3 Typical Base-Emitter Voltage vs. Collector Current

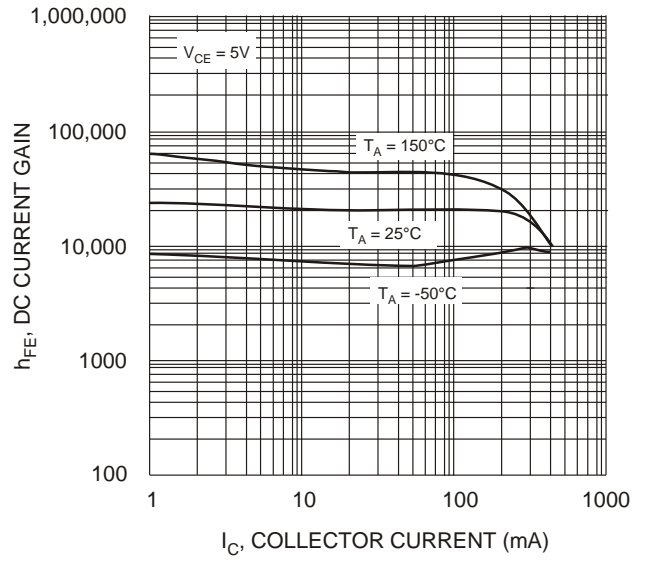


Fig. 4 Typical DC Current Gain vs. Collector Current

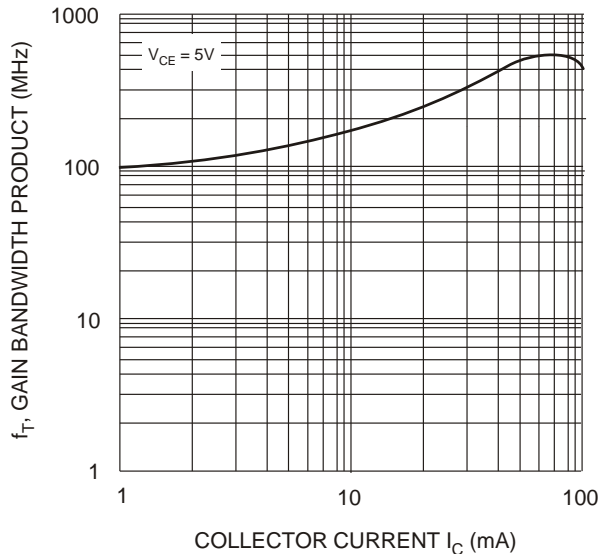


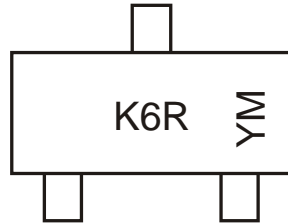
Fig. 5 Typical Gain Bandwidth Product vs. Collector Current

Ordering Information (Note 4)

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

Notes: 4. 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: T = 2006
 M = Month ex: 9 = September

Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012
Code	T	U	V	W	X	Y	Z

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

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