优尚

YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

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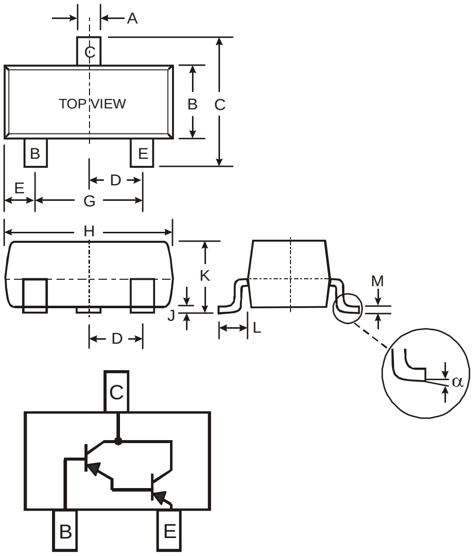
Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (NK-MMBTA13 /NK-MMBTA14)
- Ideal for Low Power Amplification and Switching
- High Current Gain



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		

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe). Terminal Connections: See Diagram
- NK-MMBTA63 Marking K2E, K3E See Page 3
- NK-MMBTA64 Marking K3E See Page 3
- Ordering & Date Code Information: See Page 3
- Weight: 0.008 grams (approximate)

Maximum Ratings

@T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-30	V
Collector-Emitter Voltage	V_{CEO}	-30	V
Emitter-Base Voltage	V_{EBO}	-10	V
Collector Current - Continuous (Note 1)	I_C	-500	mA
Power Dissipation (Note 1)	P_D	300	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	417	°C/W
Operating and Storage 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-Emitter Breakdown Voltage		$V_{(BR)CEO}$	-30	—	V	I_C = -100µA V_{BE} = 0V
Collector Cutoff Current		I_{CBO}	—	-100	nA	V_{CB} = -30V, I_E = 0
Emitter Cutoff Current		I_{EBO}	—	-100	nA	V_{EB} = -10V, I_C = 0
ON CHARACTERISTICS (Note 2)						
DC Current Gain	NK-MMBTA63 NK-MMBTA64 NK-MMBTA63 NK-MMBTA64	h_{FE}	5,000 10,000 10,000 20,000	—	—	I_C = -10mA, V_{CE} = -5.0V I_C = -10mA, V_{CE} = -5.0V I_C = -100mA, 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						
Current Gain-Bandwidth Product		f_T	125	—	MHz	V_{CE} = -5.0V, I_C = -10mA, f = 100MHz

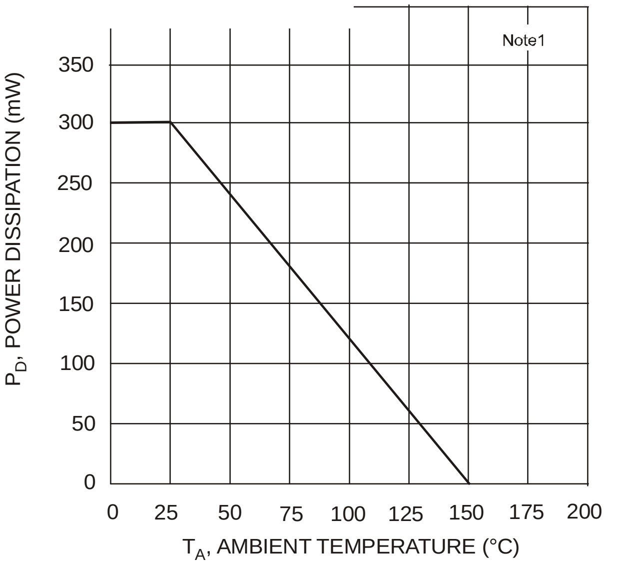


Fig. 1, Max Power Dissipation vs. Ambient Temperature

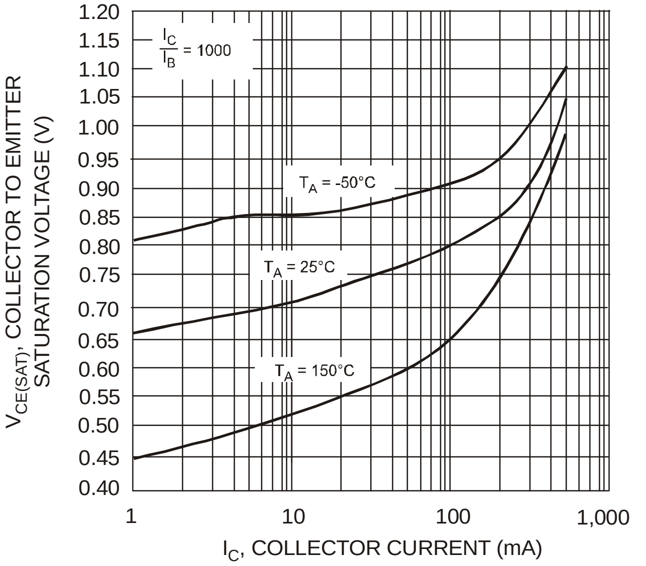


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

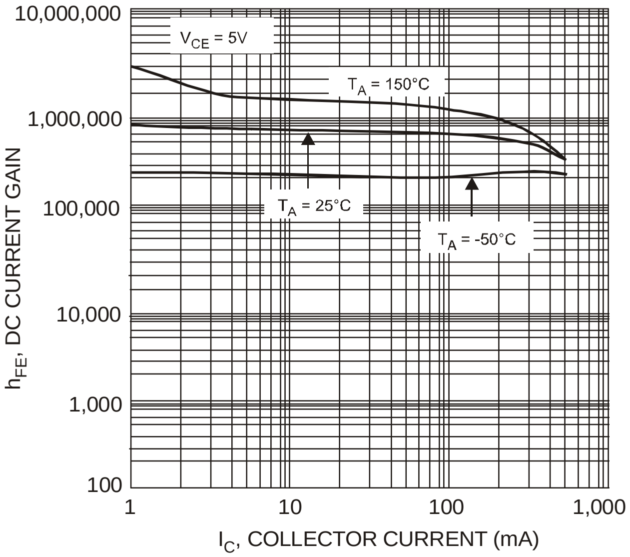


Fig. 3, DC Current Gain vs. Collector Current

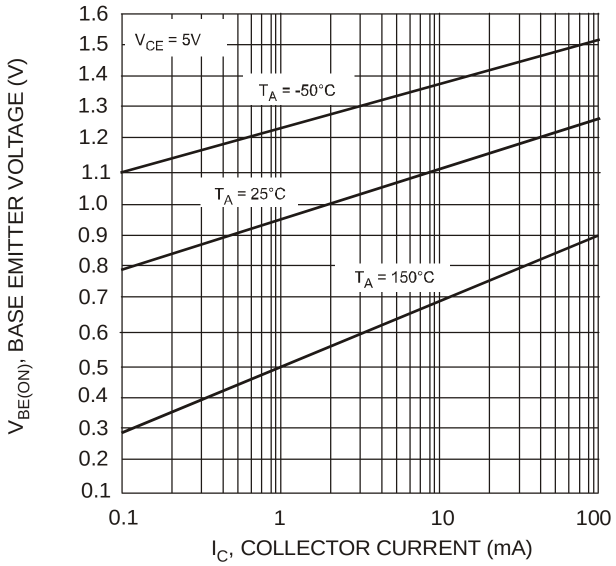


Fig. 4, Base Emitter Voltage vs. Collector Current

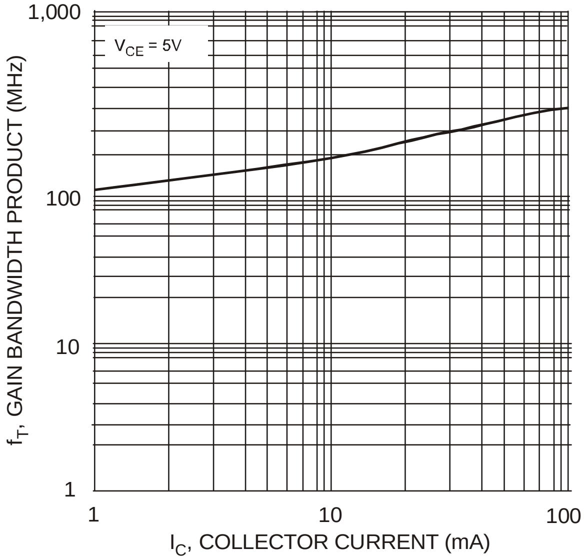


Fig. 5, Gain Bandwidth Product vs. Collector Current