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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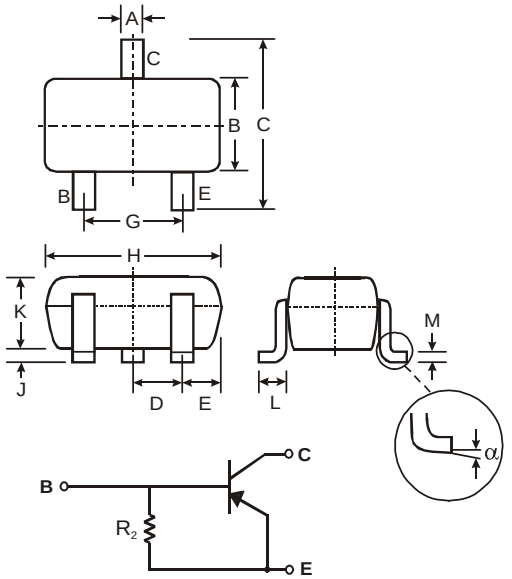
Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDTC)
- Built-In Biasing Resistor, R2 only

Mechanical Data

- Case: SOT-323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. 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: Date Code and Type Code, See Page 3
- Type Code: See Table Below
- Ordering Information: See Page 3
- Weight: 0.006 grams (approximate)



SCHEMATIC DIAGRAM

SOT-323		
Dim	**Min**	**Max**
A	0.25	0.40
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.18
α	0°	8°
All Dimensions in mm		

P/N	R2 (NOM)	Type Code
NK-DDTA114GUA	10KΩ	P26
NK-DDTA124GUA	22KΩ	P27
NK-DDTA144GUA	47KΩ	P28
NK-DDTA115GUA	100KΩ	P29

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C (Max)	-100	mA
Power Dissipation	P_d	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	625	°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	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage		BV_{CBO}	-50	—	—	V	I_C = -50μA
Collector-Emitter Breakdown Voltage		BV_{CEO}	-50	—	—	V	I_C = -1mA
Emitter-Base Breakdown Voltage		BV_{EBO}	5	—	—	V	I_E = -720μA, NK-DDTA114GUA I_E = -330μA, NK-DDTA124GUA I_E = -160μA, NK-DDTA144GUA I_E = -72μA, NK-DDTA115GUA
Collector Cutoff Current		I_{CBO}	—	—	-0.5	μA	V_{CB} = -50V
Emitter Cutoff Current	NK-DDTA114GUA NK-DDTA124GUA NK-DDTA144GUA NK-DDTA115GUA	I_{EBO}	-300 -140 -65 -30	—	-580 -260 -130 -58	μA	V_{EB} = -4V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	—	—	-0.3	V	I_C = -10mA, I_B = -0.5mA
DC Current Transfer Ratio	NK-DDTA114GUA NK-DDTA124GUA NK-DDTA144GUA NK-DDTA115GUA	h_{FE}	30 56 68 82	—	—	—	I_C = -5mA, V_{CE} = -5V
Bleeder Resistor (R_2) Tolerance		ΔR_2	-30	—	+30	%	—
Gain-Bandwidth Product*		f_T	—	250	—	MHz	V_{CE} = -10V, I_E = 5mA, f = 100MHz

* Transistor - For Reference Only

Typical Curves – NK-DDTA114GUA

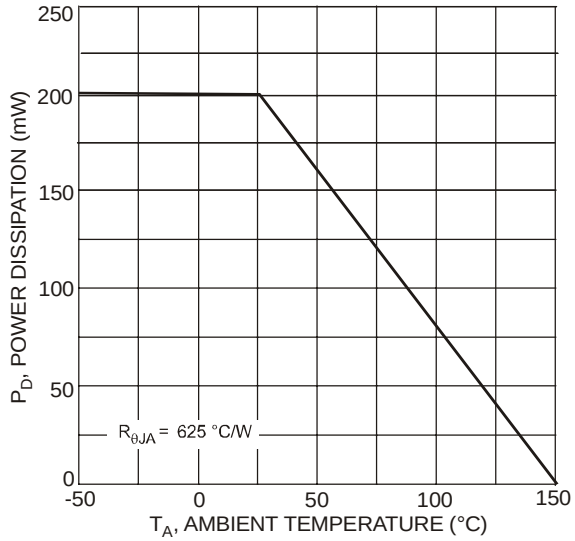


Fig. 1 Derating Curve

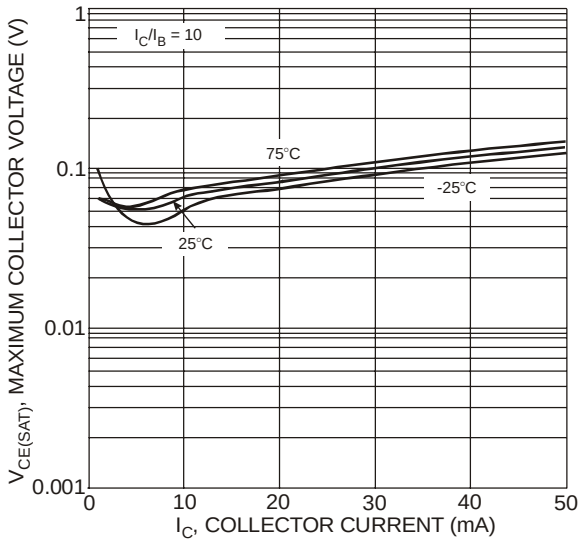


Fig. 2 $V_{CE(SAT)}$ vs. I_C

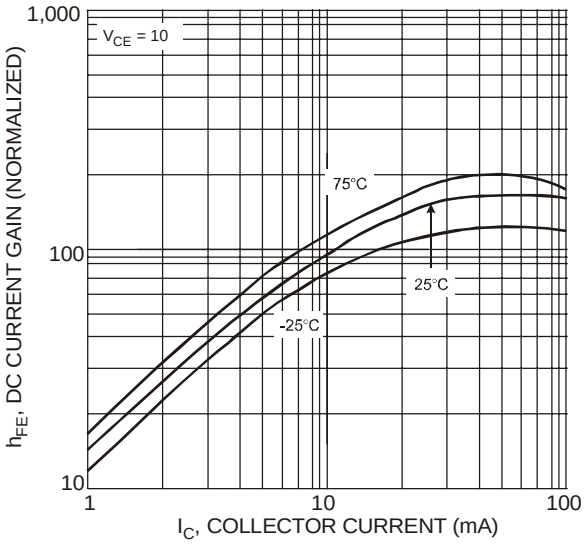


Fig. 3 DC Current Gain

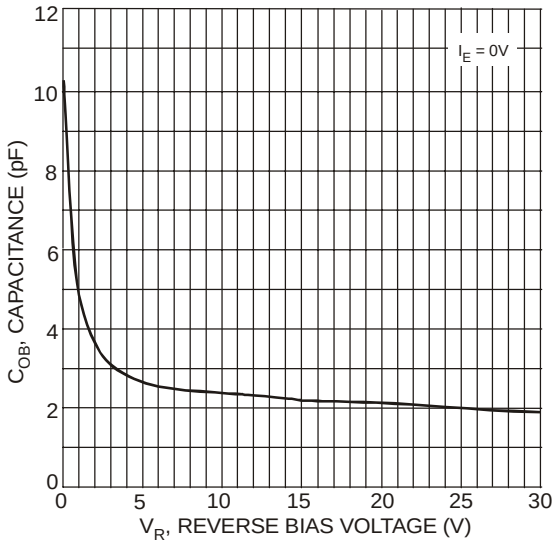


Fig. 4 Output Capacitance

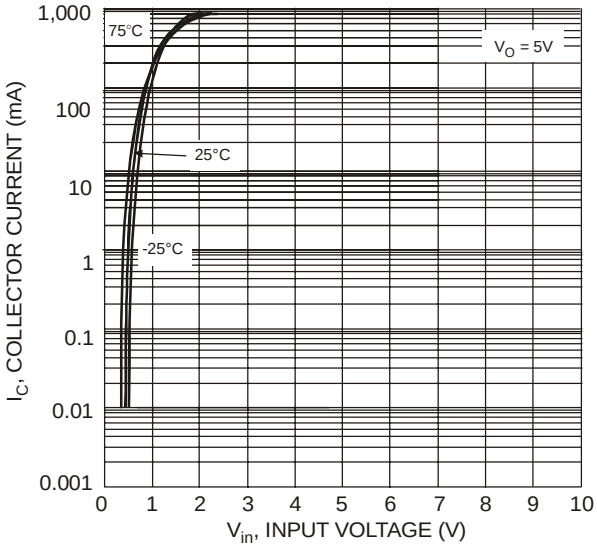


Fig. 5 Collector Current vs. Input Voltage

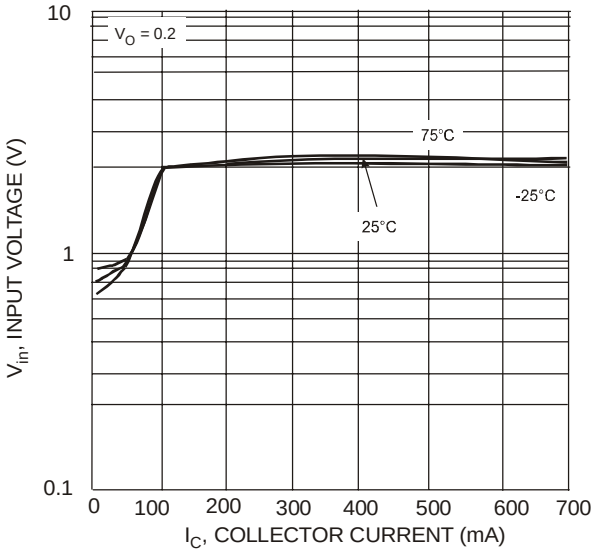


Fig. 6 Input Voltage vs. Collector Current