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

0755-83047638
ysbdt@szyoushang.cn
www.szyoushang.cn

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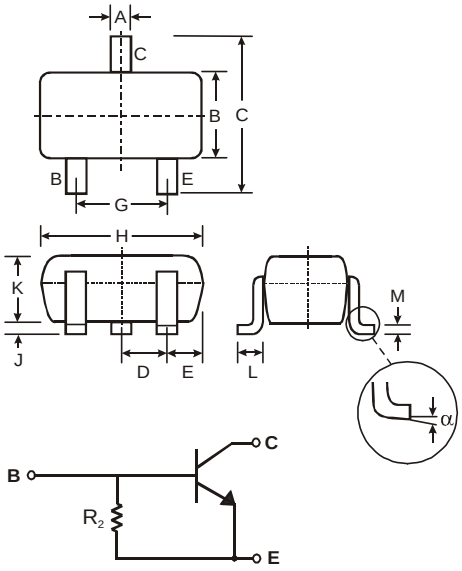
Features

- Epitaxial Planar Die Construction
- Complementary PNP Types Available (DDTA)
- 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
- Ordering Information: See Page 3
- Type Code: See Table Below
- 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-DDTC114GUA	10KΩ	N26
NK-DDTC124GUA	22KΩ	N27
NK-DDTC144GUA	47KΩ	N28
NK-DDTC115GUA	100KΩ	N29

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-DDTC114GUA I_E = 330μA, NK-DDTC124GUA I_E = 160μA, NK-DDTC144GUA I_E = 72μA, NK-DDTC115GUA
Collector Cutoff Current		I_{CBO}	—	—	0.5	μA	V_{CB} = 50V
Emitter Cutoff Current	NK-DDTC114GUA NK-DDTC124GUA NK-DDTC144GUA NK-DDTC115GUA	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-DDTC114GUA NK-DDTC124GUA NK-DDTC144GUA NK-DDTC115GUA	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 Characteristics – NK-DDTC114GUA

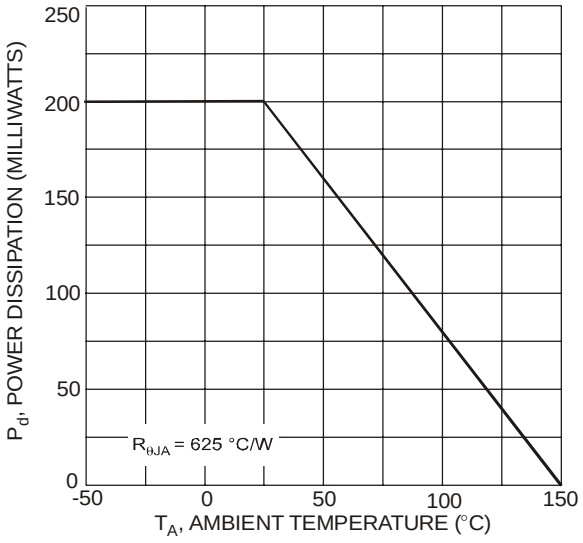


Fig. 1 Derating Curve

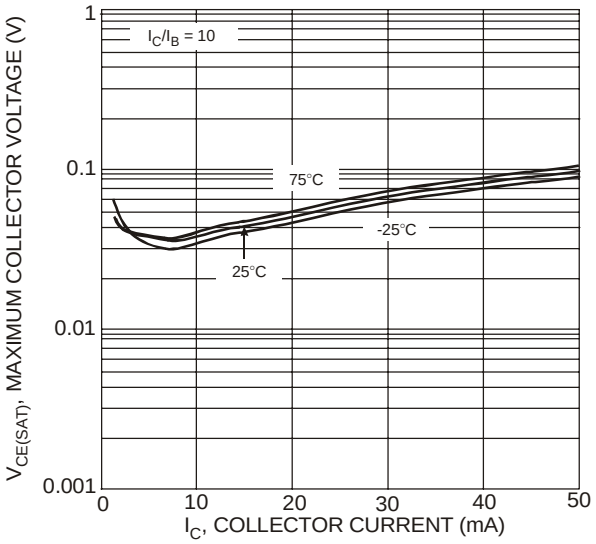


Fig. 2 $V_{CE(SAT)}$ vs. I_C

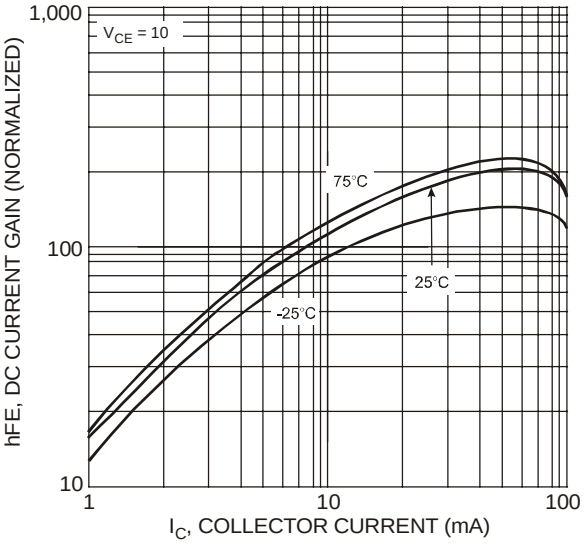


Fig. 3 DC Current Gain

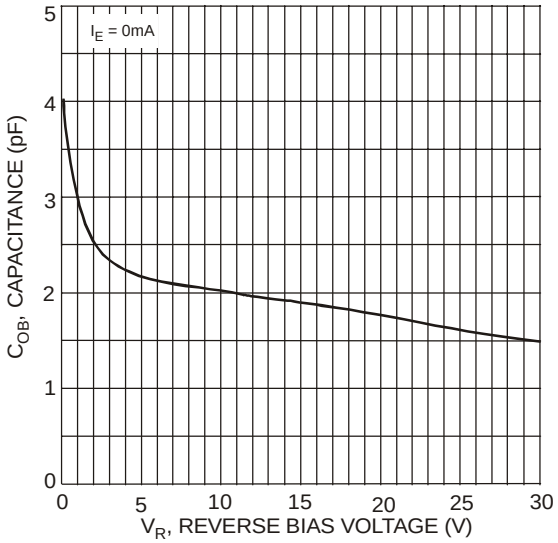


Fig. 4 Output Capacitance

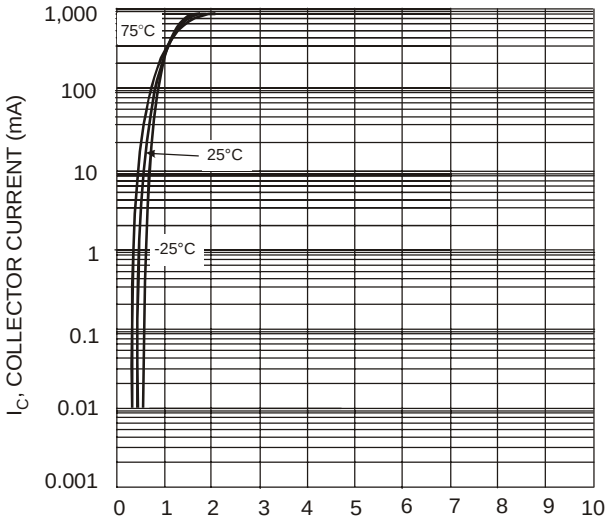


Fig. 5 Collector Current vs. Input Voltage

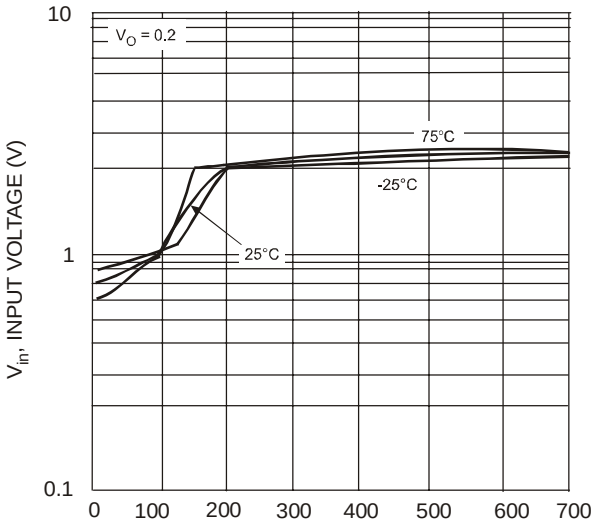


Fig. 6 Input Voltage vs. Collector Current