



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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Description

This Bipolar Junction Transistor (BJT) is designed to meet the stringent requirement of Automotive Applications.

Features

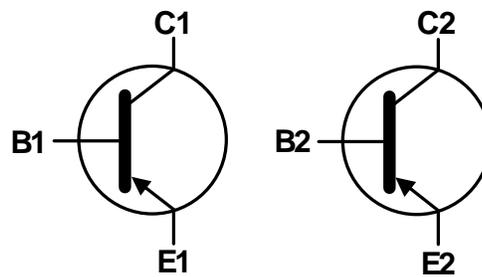
- Ultra-Small Surface Mount Package
- Ideally Suited for Automated Insertion
- For Switching and AF Amplifier Application

Mechanical Data

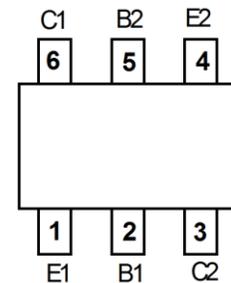
- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish — Matte Tin Finish. Solderable per MIL-STD-202, Method 208 ^{e3}
- Weight: 0.006 grams (Approximate)



Top View



Device Symbol



Top View
Pin-Out

Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	-50	V
Collector-Emitter Voltage	V _{CEO}	-45	V
Emitter-Base Voltage	V _{EBO}	-5.0	V
Collector Current	I _C	-100	mA
Peak Collector Current	I _{CM}	-200	mA
Peak Base Current	I _{BM}	-200	mA

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P _D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	R _{θJA}	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 (Note 7)	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CB0}	-50	—	—	V	I _C = -100μA, I _B = 0
Collector-Emitter Breakdown Voltage	BV _{CEO}	-45	—	—	V	I _C = -10mA, I _B = 0
Emitter-Base Breakdown Voltage	BV _{EBO}	-5	—	—	V	I _E = -100μA, I _C = 0
DC Current Gain	h _{FE}	220	—	475	—	V _{CE} = -5.0V, I _C = -2.0mA
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	—	-100 -400	mV	I _C = -10mA, I _B = -0.5mA I _C = -100mA, I _B = -5.0mA
Base-Emitter Saturation Voltage	V _{BE(SAT)}	—	-700	—	mV	I _C = -10mA, I _B = -0.5mA
Base-Emitter Voltage	V _{BE(ON)}	-580	-665	-750	mV	V _{CE} = -5.0V, I _C = -2.0mA
Collector-Cutoff Current	I _{CB0}	—	—	-15 -4.0	nA μA	V _{CB} = -30V V _{CB} = -30V, T _A = +150°C
Emitter Cutoff Current	I _{EBO}	—	—	-100	nA	V _{EB} = -5.0V, I _C = 0
Gain Bandwidth Product	f _T	100	—	—	MHz	V _{CE} = -5.0V, I _C = -10mA, f = 100MHz
Collector-Base Capacitance	C _{CB0}	—	2	3	pF	V _{CB} = -10V, f = 1.0MHz
Emitter-Base Capacitance	C _{EBO}	—	11	—	pF	V _{EB} = -0.5V, f = 1.0MHz

- Notes:
6. For the device mounted on minimum recommended pad layout FR-4 PCB with high coverage of single sided 1oz copper, in still air conditions; the device is measured when operating in a steady-state condition.
 7. Short duration pulse test used to minimize self-heating effect.

Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

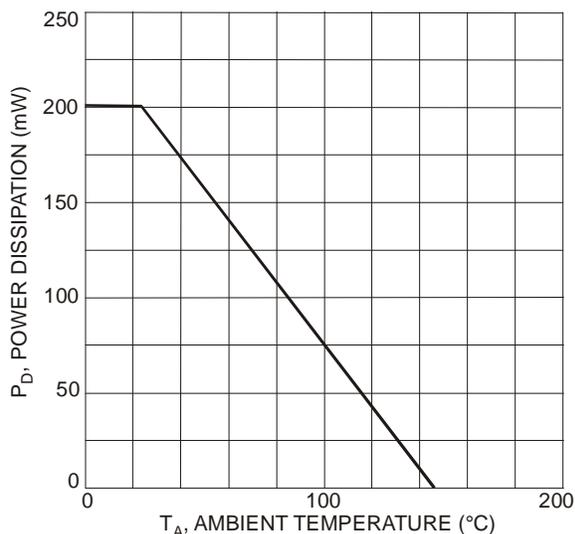


Fig. 1 Power Dissipation vs. Ambient Temperature

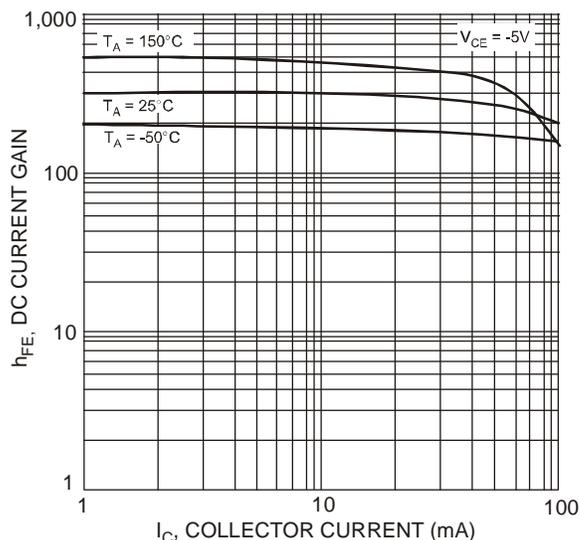


Fig. 2 Typical DC Current Gain vs. Collector Current

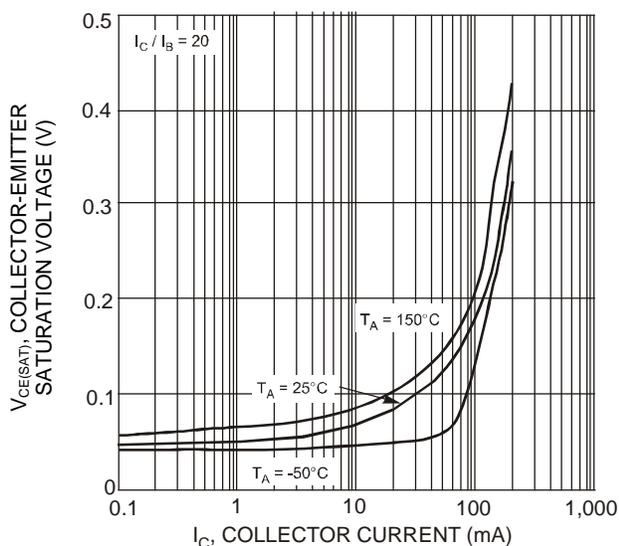


Fig. 3 Typical Collector-Emitter Saturation Voltage vs. Collector Current

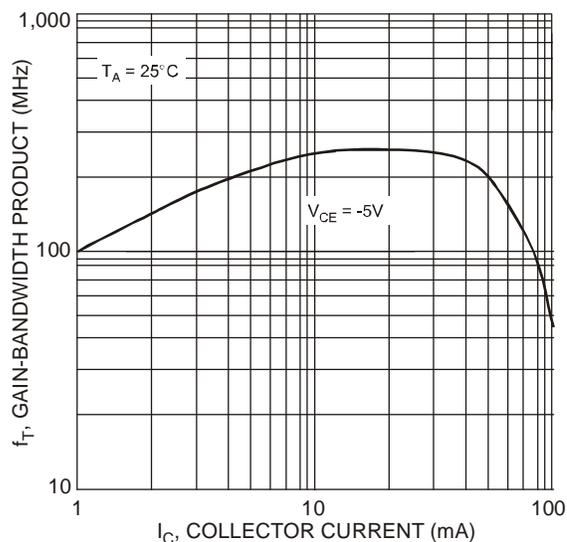
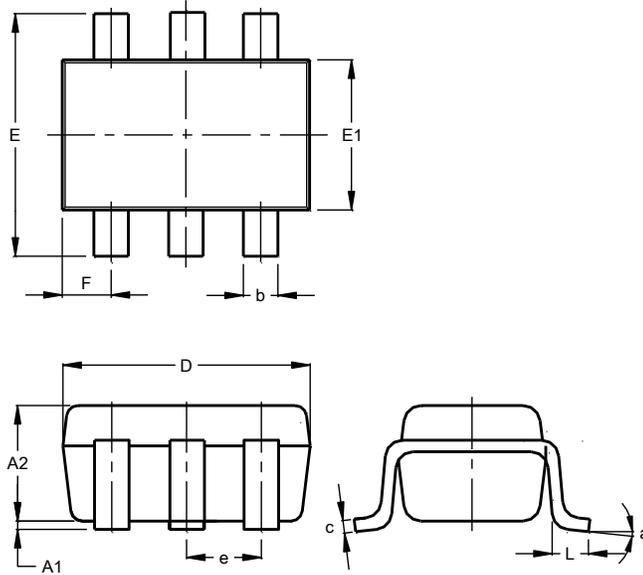


Fig. 4 Typical Gain-Bandwidth Product vs. Collector Current

Package Outline Dimensions

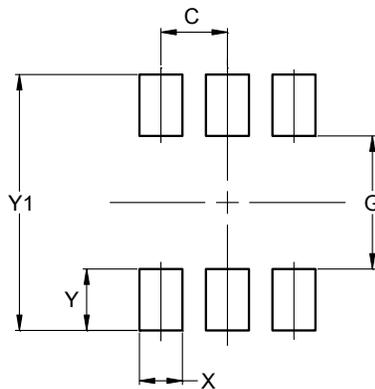
SOT363



SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	1.00
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

SOT363



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500