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

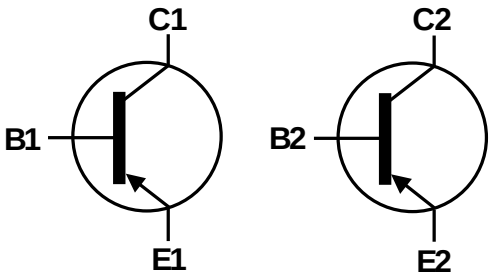
- BV_{CEO} > -45V
- I_C = -100mA High Collector Current
- Pair of PNP Transistors that are Intrinsically Matched (Note 1)
- 10% Matching on Current Gain (h_{FE})
- 2mV Matching on Base-Emitter Voltage (V_{BE})
- Fully Internally Isolated in a Small Surface Mount Package

Mechanical Data

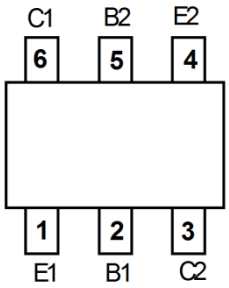
- Package: SOT363
- Package Material: Molded Plastic, “Green” Molding Compound UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish — Matte Tin Finish. Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.006 grams (approximate)

SOT363

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_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5	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) Total Device	P_D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

ESD Ratings (Note 7)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

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

Characteristic (Note 8)	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-50	—	—	V	I_C = -100μA
Collector-Emitter Breakdown Voltage	BV_{CEO}	-45	—	—	V	I_C = -10mA
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	—	—	V	I_E = -100μA
DC Current Gain	h_{FE}	220	—	475	—	V_{CE} = -5V, I_C = -2mA
DC Current Gain matching (Note 9)	h_{FE1} / h_{FE2}	0.9	1	—	—	V_{CE} = -5V, I_C = -2mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	—	-100 -400	mV	I_C = -10mA, I_B = -0.5mA I_C = -100mA, I_B = -5mA
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} = -5V, I_C = -2mA
Base-Emitter Voltage matching (Note 10)	$V_{BE1(on)}$ - $V_{BE2(on)}$	—	—	2	mV	V_{CE} = -5V, I_C = -2mA
Base-Emitter Voltage	$V_{BE(on)}$	-580	-665	-750	mV	V_{CE} = -5V, I_C = -2mA
Collector-Cutoff Current	I_{CBO}	— —	— —	-15 -4	nA μA	V_{CB} = -30V V_{CB} = -30V, T_A = +150°C
Emitter Cutoff Current	I_{EBO}	—	—	-100	nA	V_{EB} = -5V
Gain Bandwidth Product	f_T	100	—	—	MHz	V_{CE} = -5V, I_C = -10mA, f = 100MHz
Collector-Base Capacitance	C_{CBO}	—	2	3	pF	V_{CB} = -10V, f = 1MHz
Emitter-Base Capacitance	C_{EBO}	—	11	—	pF	V_{EB} = -0.5V, f = 1MHz

Notes:
6. For a device mounted on minimum recommended pad layout with 1oz copper that is on a single-sided 1.6mm FR4 PCB; the device is measured under still air conditions whilst operating in a steady state.
7. Refer to JEDEC specification JESD22-A114 and JESD22-A115.
8. Short duration pulse test used to minimize self-heating effect.
9. The smaller of the two values is taken as the numerator.
10. The smaller of the two values is subtracted from the larger value.

Typical Electrical Characteristics (@ T_A = +25°C unless otherwise specified.)

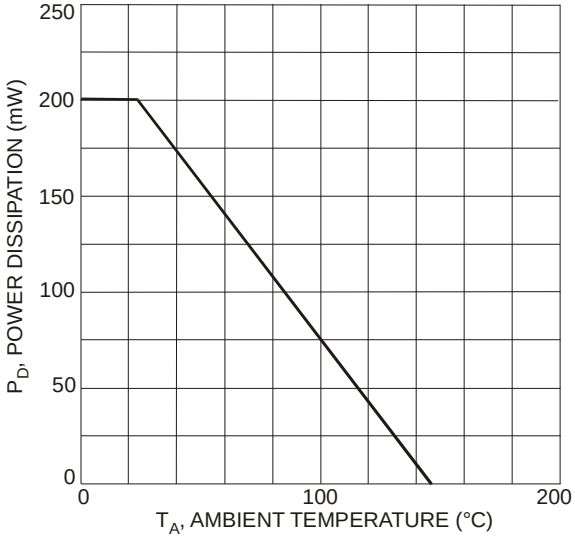


Fig. 1 Power Dissipation vs. Ambient Temperature

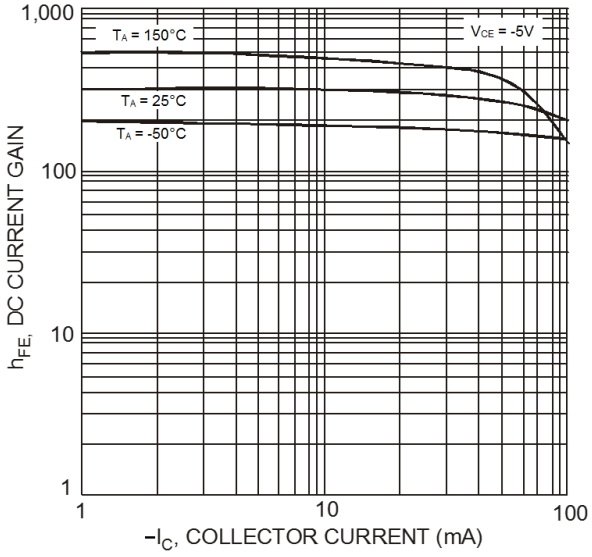


Fig. 2 Typical DC Current Gain vs. Collector Current

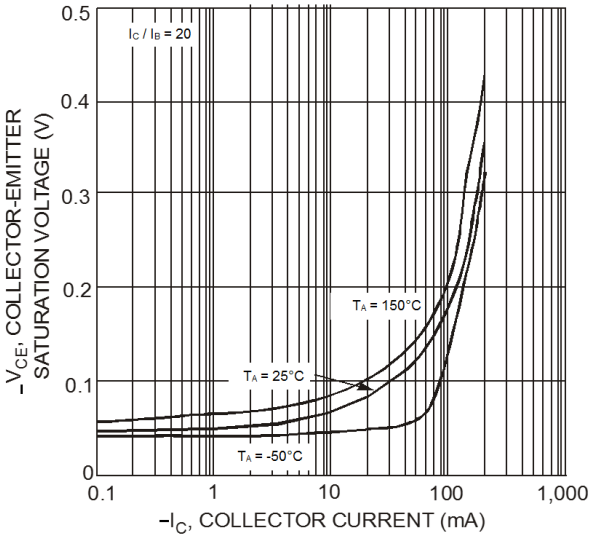


Fig. 3 Typical Collector-Emitter Saturation Voltage vs. Collector Current

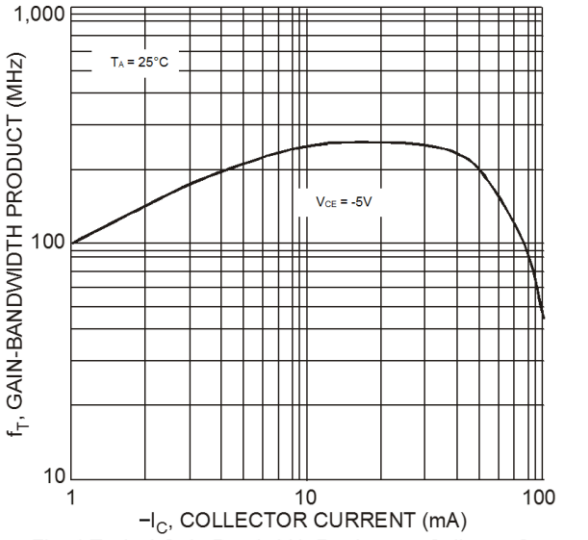
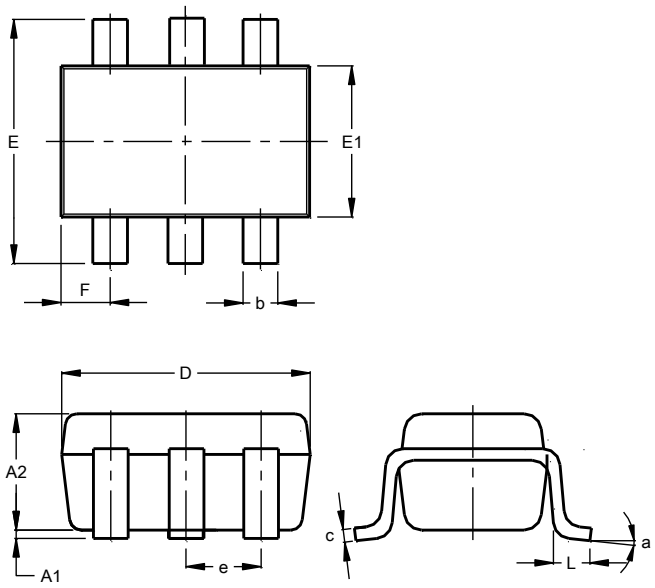


Fig. 4 Typical Gain-Bandwidth Product vs. Collector Current

Package Outline Dimensions

SOT363



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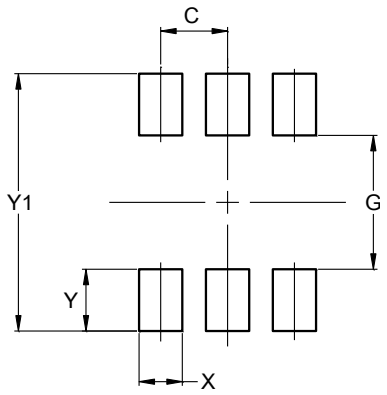
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

SOT363



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