



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

- Ultra-Small Surface Mount Package
- Current Gain Matching
- Base-Emitter Voltage Matching
- Ideally Suited for Automated Insertion
- For Switching and AF Amplifier Application

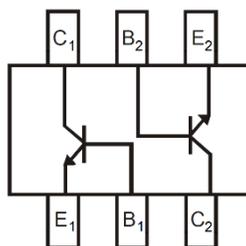
Mechanical Data

- 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 
- Weight: 0.006 grams (Approximate)

SOT363



Top View



Device Schematic
Top View

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}	6	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 5)	P _D	200	mW
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

ESD Ratings (Note 6)

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 7)	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}	6	—	—	V	I _E = 100μA
DC Current Gain	h _{FE}	200	—	450	—	V _{CE} = 5V, I _C = 2mA
DC Current Gain Matching	h _{FE1} /h _{FE2}	0.9	1	1.1	—	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)}	—	755	—	mV	I _C = 10mA, I _B = 0.5mA
		—	905	—	mV	I _C = 100mA, I _B = 5mA
Base-Emitter Voltage	V _{BE(on)}	610	665	710	mV	V _{CE} = 5V, I _C = 2mA
Base-Emitter Voltage Matching	V _{BE1(on)} - V _{BE2(on)}	-2	—	2	mV	V _{CE} = 5V, I _C = 2mA
Collector-Cutoff Current	I _{CBO}	—	—	15	nA	V _{CB} = 40V
		—	—	5	μA	V _{CB} = 40V, T _A = +125°C
Emitter-Cutoff Current	I _{EBO}	—	—	20	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:
5. For a device mounted with the collector lead on minimum recommended pad layout 1oz copper that is on a single-sided 1.6mm FR-4 PCB; device is measured under still air conditions whilst operating in a steady-state.
 6. Refer to JEDEC specification JESD22-A114 and JESD22-A115.
 7. Short duration pulse test used to minimize self-heating effect.

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

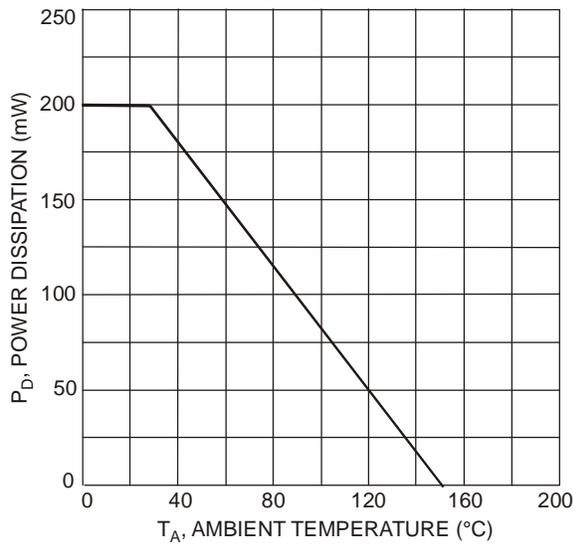


Figure 1 Power Derating Curve

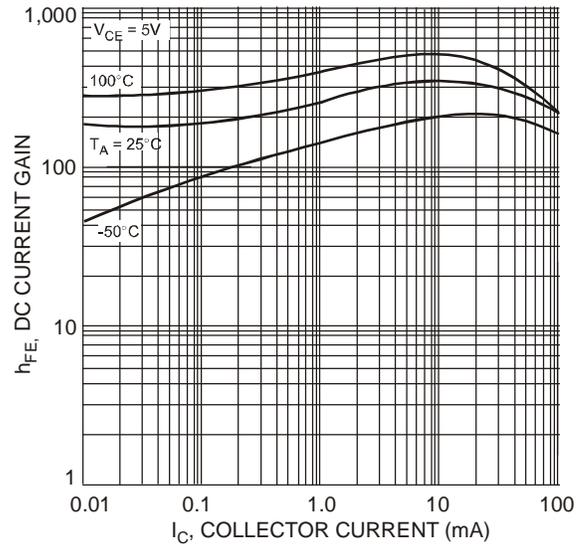


Figure 2 Typical DC Current Gain vs. Collector Current

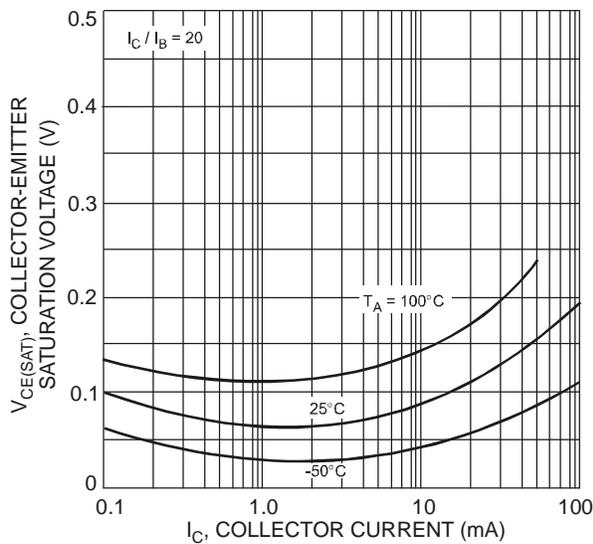


Figure 3 Typical Collector-Emitter Saturation Voltage vs. Collector Current

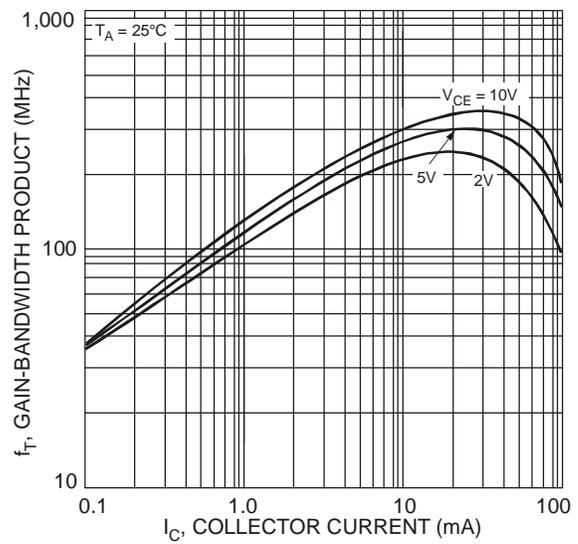
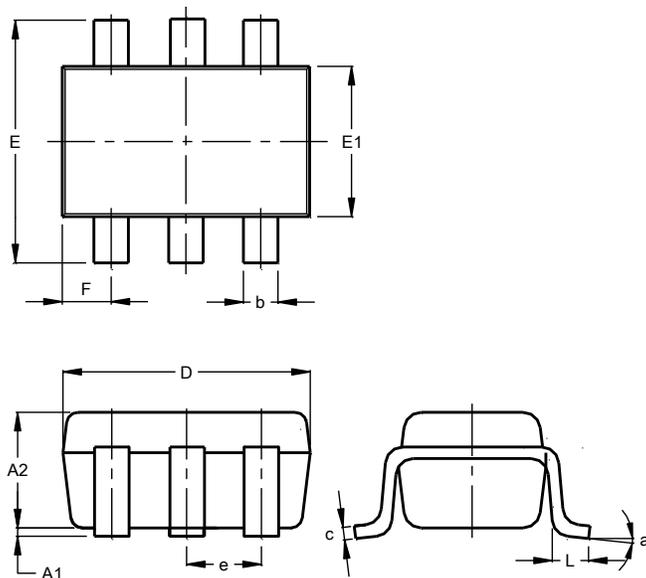


Figure 4 Typical Gain-Bandwidth Product vs. Collector Current

Package Outline Dimensions

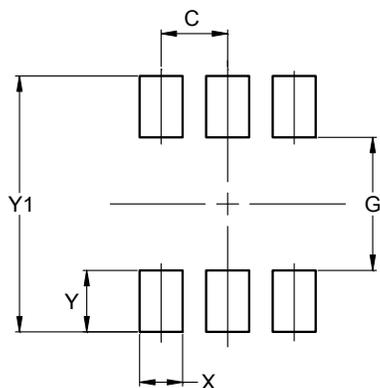
SOT363



SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	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