



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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企业微信二维码



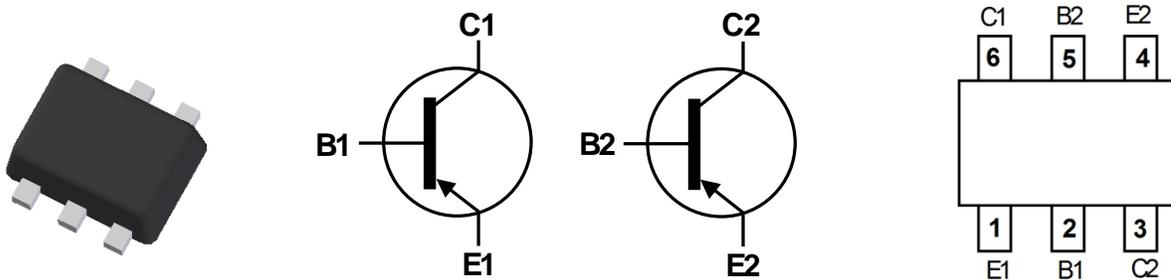
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Features

- $BV_{CEO} > -45V$
- $I_C = -100mA$ High Collector Current
- Pair of PNP Transistors That Are Intrinsicly Matched (Note 1)
- 2% 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: SOT563
- 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 Annealed over Copper Leadframe; Solderable per MIL-STD-202, Method 208③
- Weight: 0.003 grams (Approximate)



Absolute Maximum Ratings (@ $T_A = +25^\circ\text{C}$, 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 (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

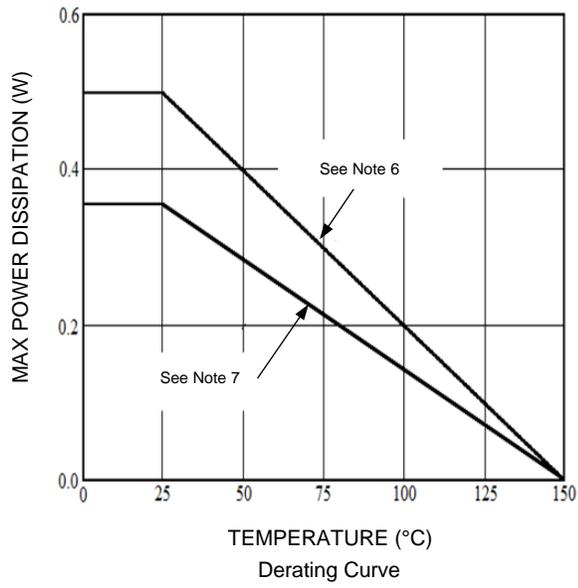
Characteristic	Symbol	Value	Unit
Power Dissipation. Total Device (Note 6)	P_D	500	mW
Power Dissipation. Single Transistor (Note 7)	P_D	357	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	$R_{\theta JA}$	+250	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient Air (Note 7)	$R_{\theta JA}$	+350	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

ESD Ratings (Note 8)

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

- Notes:
6. For a device with two active die running at equal power, 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. Same as Note 6 except for only one active die running.
 8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

Thermal Characteristics and Derating Information

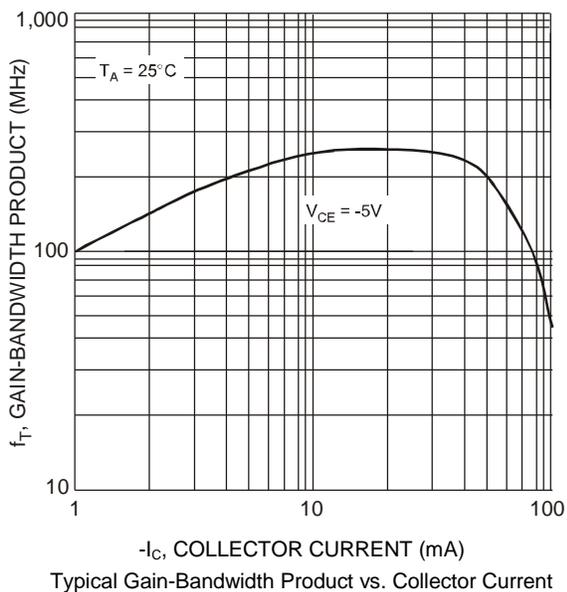
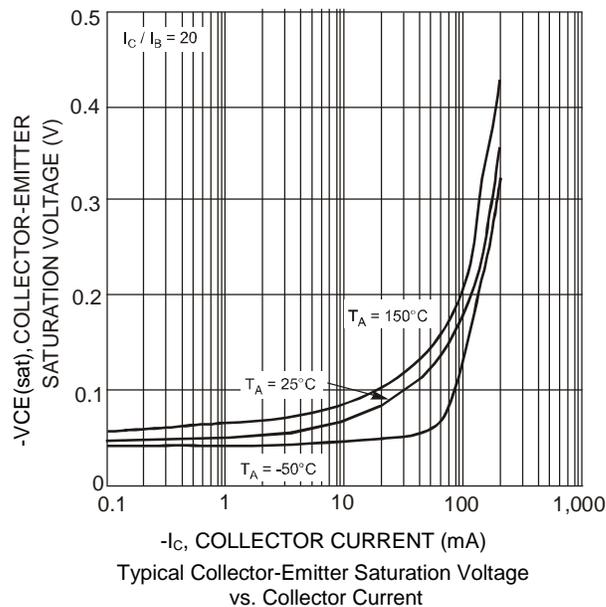
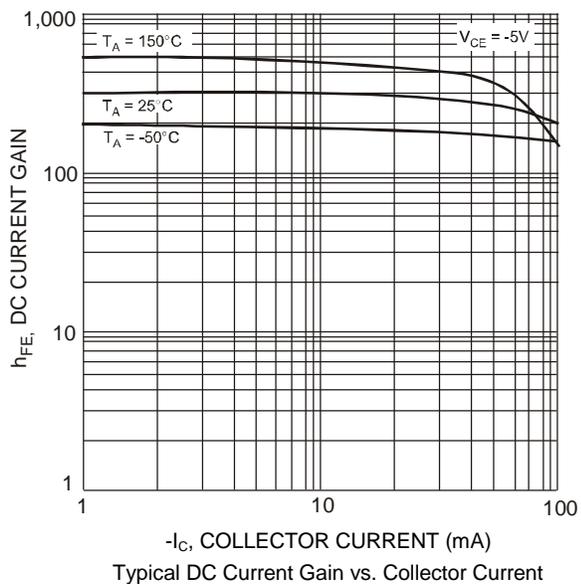


Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic (Note 9)	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-50	—	—	V	$I_C = -100\mu\text{A}, I_B = 0$
Collector-Emitter Breakdown Voltage	BV_{CEO}	-45	—	—	V	$I_C = -10\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	—	—	V	$I_E = -100\mu\text{A}, I_C = 0$
DC Current Gain	h_{FE}	200	290	450	—	$V_{CE} = -5.0\text{V}, I_C = -2.0\text{mA}$
DC Current Gain Matching (Note 10)	h_{FE1}/h_{FE2}	0.98	1	—	—	$V_{CE} = -5.0\text{V}, I_C = -2.0\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	-50 -200	-200 -400	mV	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$ $I_C = -100\text{mA}, I_B = -5.0\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	—	-760	—	mV	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$
Base-Emitter Voltage	$V_{BE(on)}$	-600	-650	-700	mV	$V_{CE} = -5.0\text{V}, I_C = -2.0\text{mA}$
Base-Emitter Voltage Matching (Note 11)	$V_{BE1(on)} - V_{BE2(on)}$	—	—	2	mV	$V_{CE} = -5.0\text{V}, I_C = -2.0\text{mA}$
Collector Cut-Off Current	I_{CBO}	—	—	-15 -5.0	nA μA	$V_{CB} = -30\text{V}$ $V_{CB} = -30\text{V}, T_A = +150^\circ\text{C}$
Emitter Cut-Off Current	I_{EBO}	—	—	-100	nA	$V_{EB} = -5.0\text{V}, I_C = 0$
Gain Bandwidth Product	f_T	100	175	—	MHz	$V_{CE} = -5.0\text{V}, I_C = -10\text{mA}$, $f = 100\text{MHz}$
Collector-Base Capacitance	C_{CBO}	—	—	2.2	pF	$V_{CB} = -10\text{V}, f = 1.0\text{MHz}$
Emitter-Base Capacitance	C_{EBO}	—	10	—	pF	$V_{EB} = -0.5\text{V}, f = 1.0\text{MHz}$

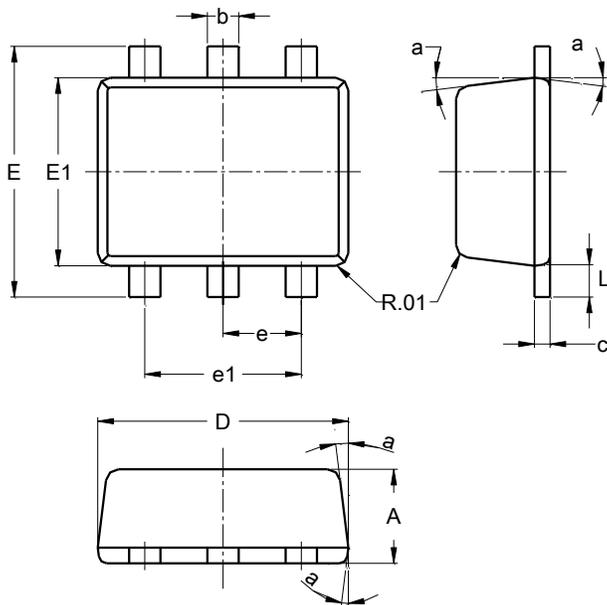
- Notes:
9. Short duration pulse test used to minimize self-heating effect.
 10. The smaller of the two values is taken as the numerator.
 11. The smaller of the two values is subtracted from the larger value.

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



Package Outline Dimensions

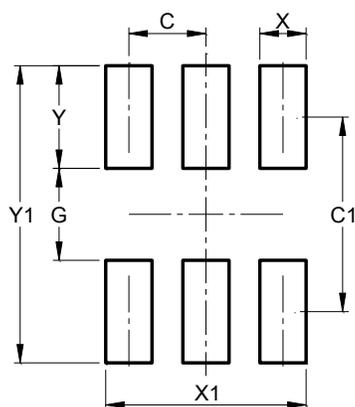
SOT563



SOT563			
Dim	Min	Max	Typ
A	0.55	0.60	--
b	0.15	0.30	0.20
c	0.10	0.18	0.11
D	1.50	1.70	1.60
E	1.55	1.70	1.60
E1	1.10	1.25	1.20
e	--	--	0.50
e1	0.90	1.10	1.00
L	0.10	0.30	0.20
a	8°	9°	7°
All Dimensions in mm			

Suggested Pad Layout

SOT563



Dimensions	Value (in mm)
C	0.500
C1	1.270
G	0.600
X	0.300
X1	1.300
Y	0.670
Y1	1.940