



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

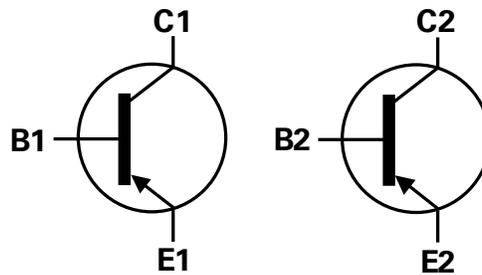
- $BV_{CEO} > -150V$
- $I_C = -200mA$ High Collector Current
- Pair of PNP Transistors That Are Intrinsically Matched (Note 1)
- 2% Matched Tolerance, h_{FE} , $V_{CE(sat)}$, $V_{BE(sat)}$
- Ideal for Medium Power Amplification and Switching
- Fully Internally Isolated in a Small Surface-Mount Package
- Epitaxial Planar Die Construction

Mechanical Data

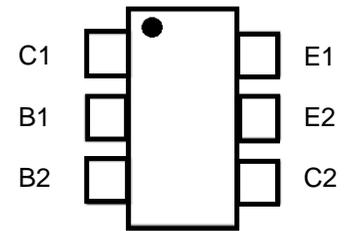
- Package: SOT26
- Package Material: Molded Plastic. "Green" Molding Compound. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads. Solderable per MIL-STD-202, Method 208 ③
- Weight: 0.018 grams (Approximate)



Top View



Device Symbol



Top View
Pin-Out

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-160	V
Collector-Emitter Voltage	V_{CEO}	-150	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-200	mA

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

Characteristic	Symbol	Value	Unit
Power Dissipation Total Device	P_D	300	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	156	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 8)						
Collector-Base Breakdown Voltage	BV_{CBO}	-160	—	—	V	$I_C = -100\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	BV_{CEO}	-150	—	—	V	$I_C = -1\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	—	—	V	$I_E = -10\mu\text{A}, I_C = 0$
Collector-Base Cutoff Current	I_{CBO}	—	—	-50	nA μA	$V_{CB} = -120\text{V}, I_E = 0$ $V_{CB} = -120\text{V}, I_E = 0, T_A = +100^\circ\text{C}$
Emitter-Base Cutoff Current	I_{EBO}	—	—	-50	nA	$V_{EB} = -3\text{V}, I_B = 0$
ON CHARACTERISTICS (Note 8)						
DC Current Gain (Note 9)	h_{FE}	50 60 50	—	240	—	$I_C = -1\text{mA}, V_{CE} = -5\text{V}$ $I_C = -10\text{mA}, V_{CE} = -5\text{V}$ $I_C = -50\text{mA}, V_{CE} = -5\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	—	-0.2 -0.5	V	$I_C = -10\text{mA}, I_B = -1\text{mA}$ $I_C = -50\text{mA}, I_B = -5\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	—	—	-1	V	$I_C = -10\text{mA}, I_B = -1\text{mA}$ $I_C = -50\text{mA}, I_B = -5\text{mA}$
SMALL SIGNAL CHARACTERISTICS						
Current Gain-Bandwidth Product	f_T	100	—	300	MHz	$V_{CE} = -10\text{V}, I_C = -10\text{mA}, f = 100\text{MHz}$
Output Capacitance	C_{OBO}	—	—	6	pF	$V_{CB} = -10\text{V}, f = 1.0\text{MHz}, I_E = 0$
Small Signal Current Gain	h_{fe}	40	—	260	—	$V_{CE} = -10\text{V}, I_C = -1\text{mA}, f = 1.0\text{kHz}$
Noise Figure	NF	—	—	8	dB	$V_{CE} = -5\text{V}, I_C = -200\mu\text{A}, R_S = 10\Omega, f = 1.0\text{kHz}$

- Notes:
6. For a device mounted on minimum recommended pad layout with 1oz copper that is on a single-sided 1.6mm FR-4 PCB; the device is measured under still air conditions whilst operating in a steady state.
 7. Maximum combined dissipation.
 8. Short duration pulse test used to minimize self-heating effect.
 9. The DC Current Gain, h_{FE} , (matched at $I_C = -10\text{mA}$ and $V_{CE} = -5\text{V}$) Collector Emitter Saturation Voltage, $V_{CE(sat)}$, and Base Emitter Saturation Voltage, $V_{BE(sat)}$ are matched with typical matched tolerances of 1% and maximum of 2%.

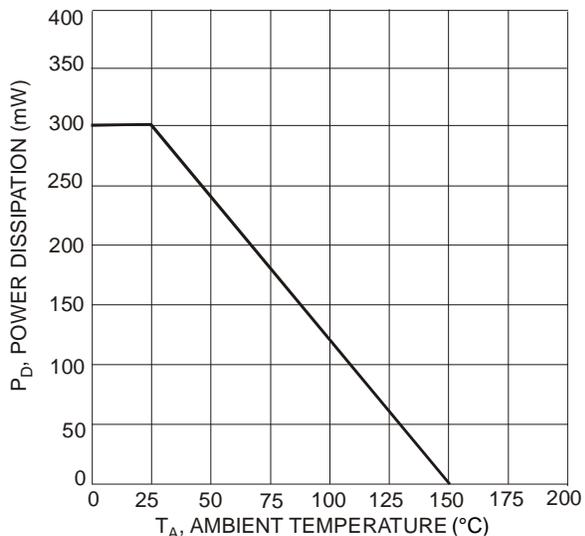


Fig. 1 Power Dissipation vs. Ambient Temperature

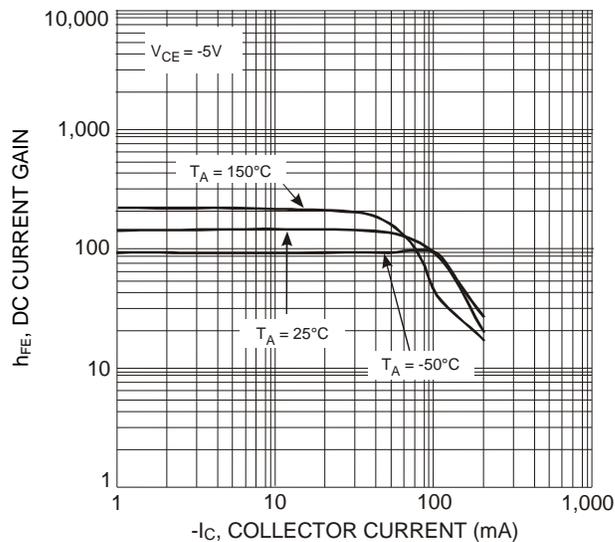


Fig. 2 Typical DC Current Gain vs. Collector Current

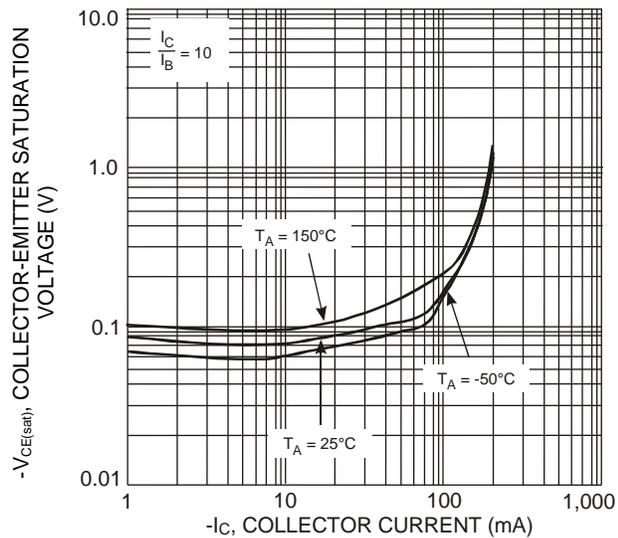


Fig. 3 Typical Collector-Emitter Saturation Voltage vs. Collector Current

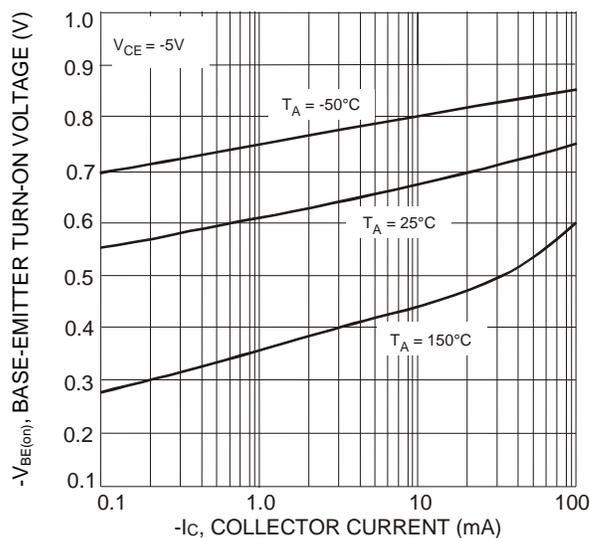


Fig. 4 Typical Base-Emitter Turn-On Voltage vs. Collector Current

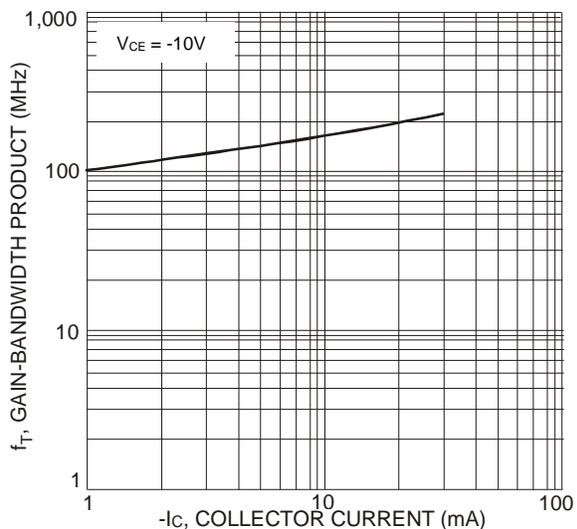
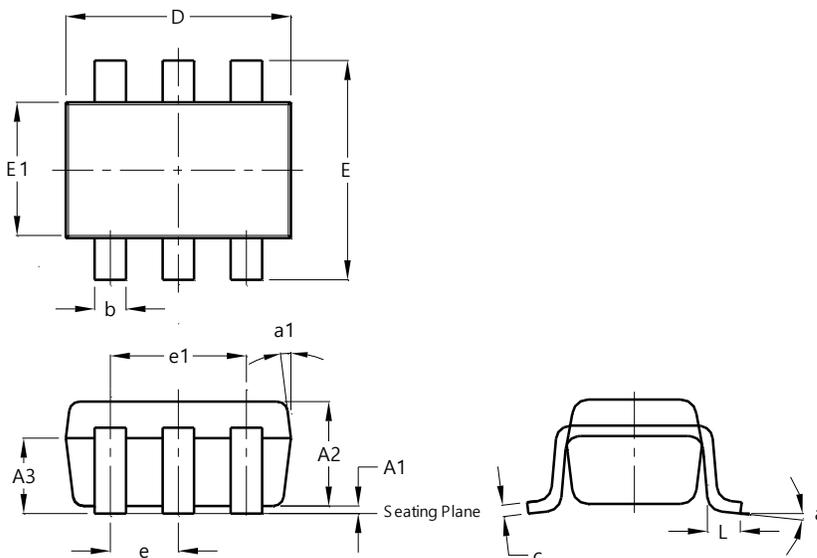


Fig. 5 Typical Gain-Bandwidth Product vs. Collector Current

Package Outline Dimensions

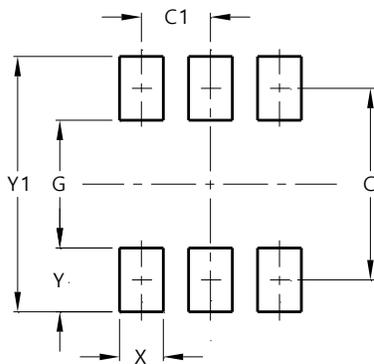
SOT26



SOT26			
Dim	Min	Max	Typ
A1	0.013	0.10	0.05
A2	1.00	1.30	1.10
A3	0.70	0.80	0.75
b	0.35	0.50	0.38
c	0.10	0.20	0.15
D	2.90	3.10	3.00
e	-	-	0.95
e1	-	-	1.90
E	2.70	3.00	2.80
E1	1.50	1.70	1.60
L	0.35	0.55	0.40
a	-	-	8°
a1	-	-	7°
All Dimensions in mm			

Suggested Pad Layout

SOT26



Dimensions	Value (in mm)
C	2.40
C1	0.95
G	1.60
X	0.55
Y	0.80
Y1	3.20