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

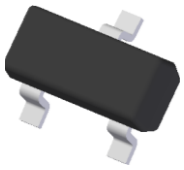
- Epitaxial Planar Die Construction
- Complementary PNP Types Available (ADTA)
- Built-In Biasing Resistors, R1 = R2

Mechanical Data

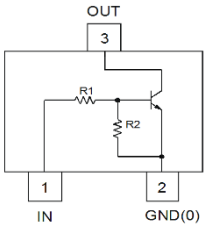
- Case: SOT23
- Case Material: Molded Plastic, “Green” Molding Compound UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.008 grams (Approximate)

R1, R2 (NOM)
22kΩ

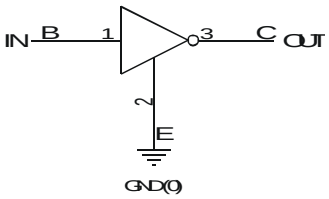
SOT23



Top View



Device Schematic



Equivalent Inverter Circuit

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

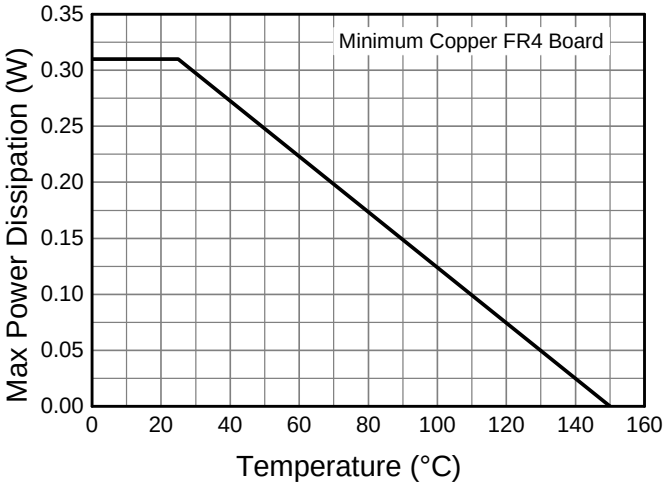
Characteristic	Symbol	Value	Unit
Supply Voltage <Pin: (3) to (2)>	V_{CC}	50	V
Input Voltage <Pin: (1) to (2)>	V_{IN}	-10 to +40	V
Output Current	I_O	30	mA
Output Current	I_C (Max)	100	mA

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

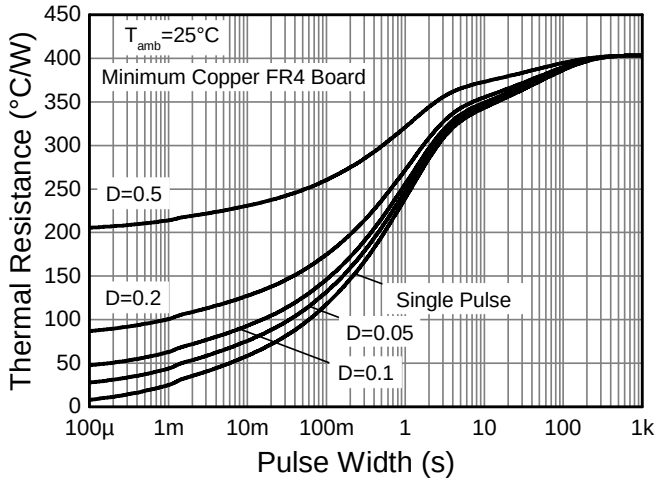
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_D	310	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	$R_{\theta JA}$	403	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Note: 6. Mounted on FR4 PC Board with minimum recommended pad layout.

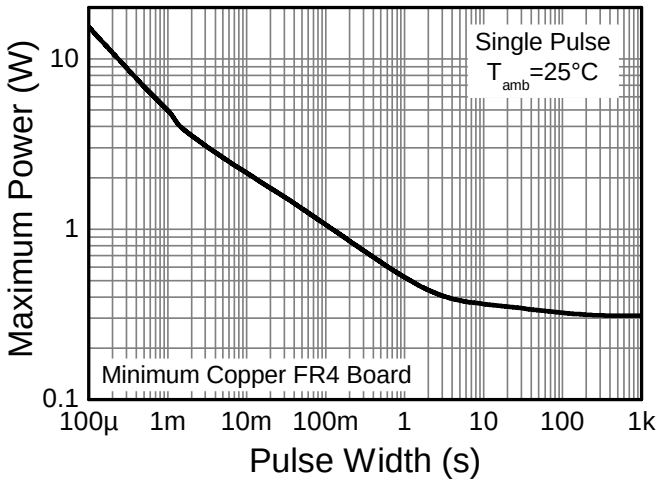
Thermal Characteristics and Derating Information



Derating Curve



Transient Thermal Impedance



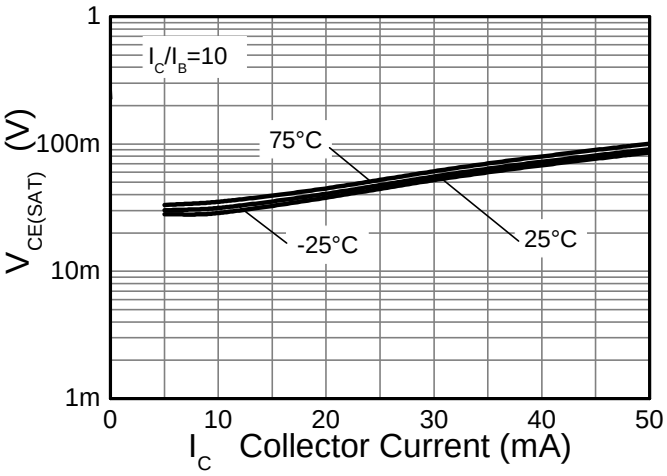
Pulse Power Dissipation

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

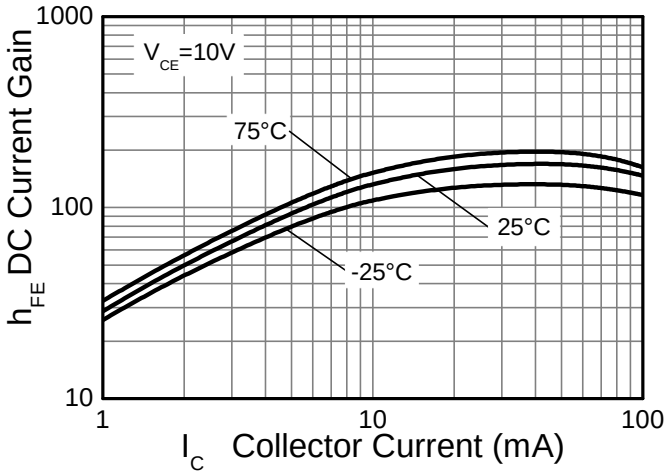
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	$V_{I(OFF)}$	0.5	1.1	—	V	V_{CC} = 5V, I_O = 100μA
	$V_{I(ON)}$	—	1.9	3		V_O = 0.3V, I_O = 5mA
Output Voltage	$V_{O(ON)}$	—	0.1	0.3	V	I_O/I_I = 10mA/0.5mA
Input Current	I_I	—	—	0.36	mA	V_I = 5V
Output Current	$I_{O(OFF)}$	—	—	0.5	μA	V_{CC} = 50V, V_I = 0V
DC Current Gain	G_I	56	—	—	—	V_O = 5V, I_O = 5mA
Input Resistor Tolerance	ΔR_1	-30	—	+30	%	—
Resistance Ratio Tolerance	$\Delta R_2/R_1$	-20	—	+20	%	—
Gain-Bandwidth Product (Note 7)	f_T	—	250	—	MHz	V_{CE} = 10V, I_E = 5mA, f = 100MHz

Note: 7. Transistor - For Reference Only

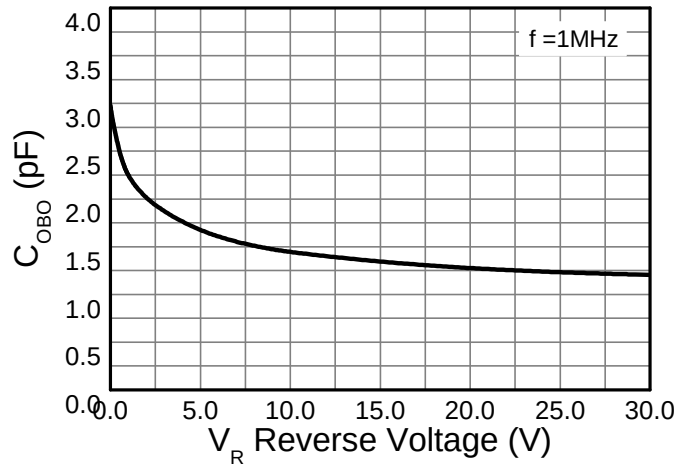
Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)



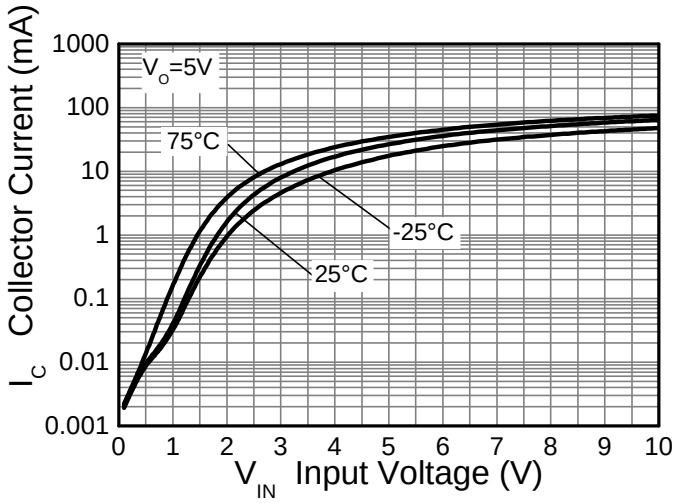
$V_{CE(SAT)}$ v Collector Current



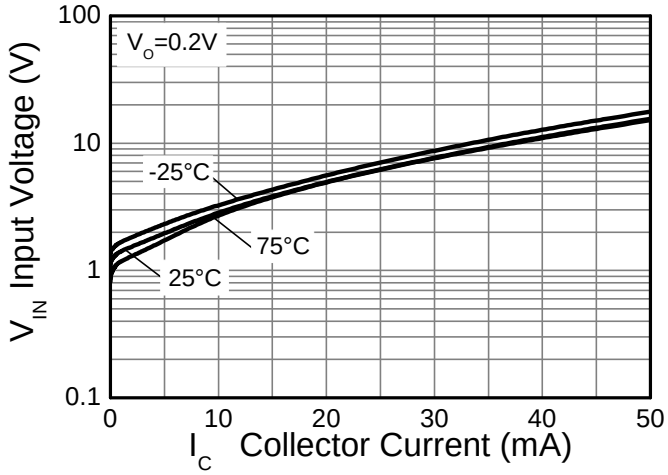
h_{FE} v Collector Current



Output Capacitance



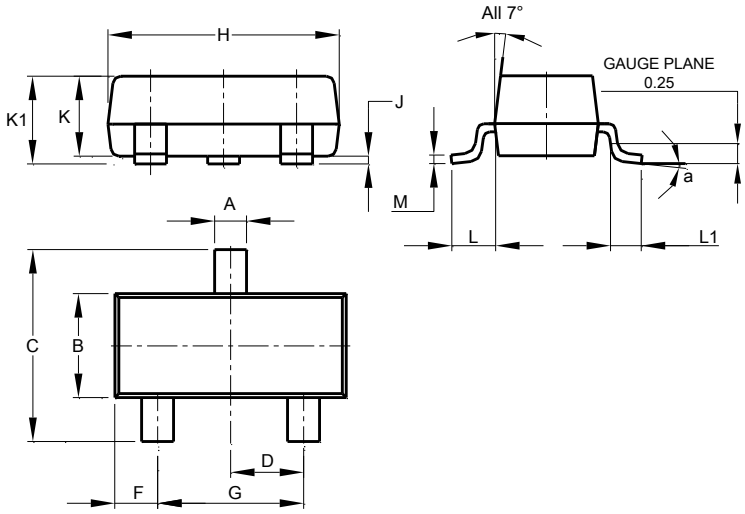
Collector Current v Input Voltage



Input Voltage v Collector Current

Package Outline Dimensions

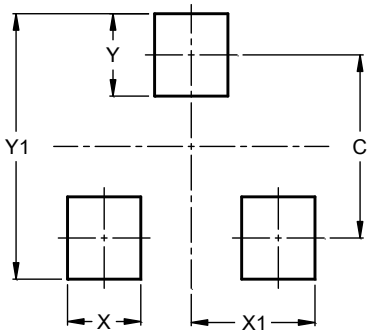
SOT23



SOT23			
Dim	**Min**	**Max**	**Typ**
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9