



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
- Built-In Biasing Resistors
- Surface Mount Package Suited for Automated Assembly

Mechanical Data

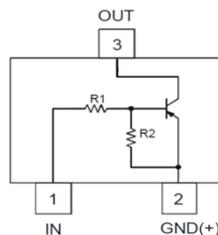
- Case: SOT323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (e3)
- Weight: 0.006 grams (Approximate)

R ₁ (NOM)	R ₂ (NOM)
10kΩ	47kΩ

SOT323



Top View



Device Schematic

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

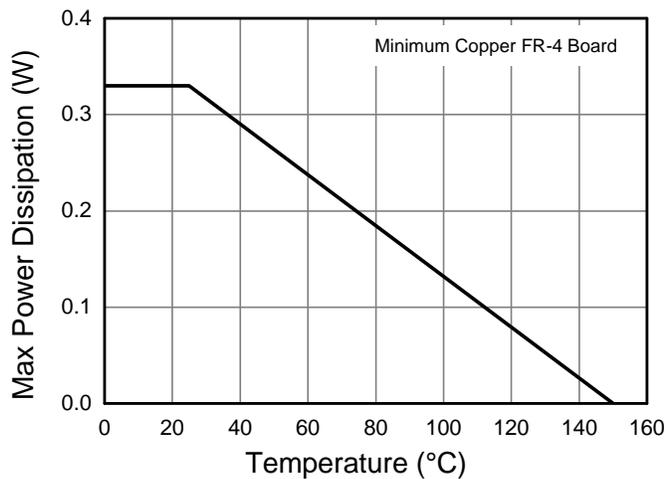
Characteristic	Symbol	Value	Unit
Supply Voltage <Pin: (3) to (2)>	V_{CC}	-50	V
Input Voltage <Pin: (1) to (2)>	V_{IN}	+6 to -40	V
Output Current	I_O	-70	mA
Output Current	I_C (Max)	-100	mA

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

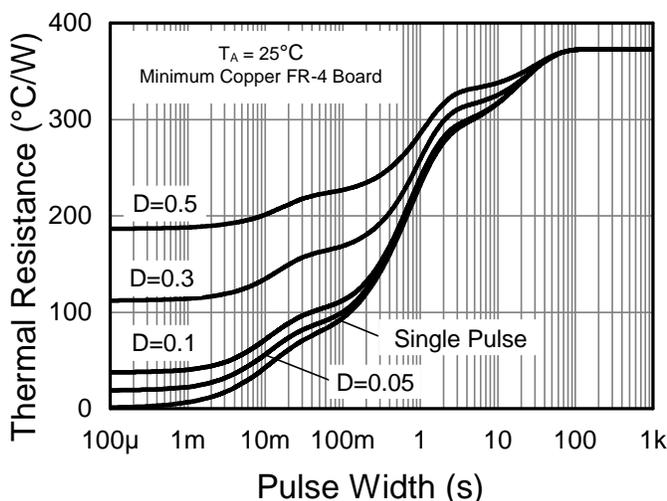
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	330	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	375	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Note: 5. Mounted on FR-4 PC Board with minimum recommended pad layout.

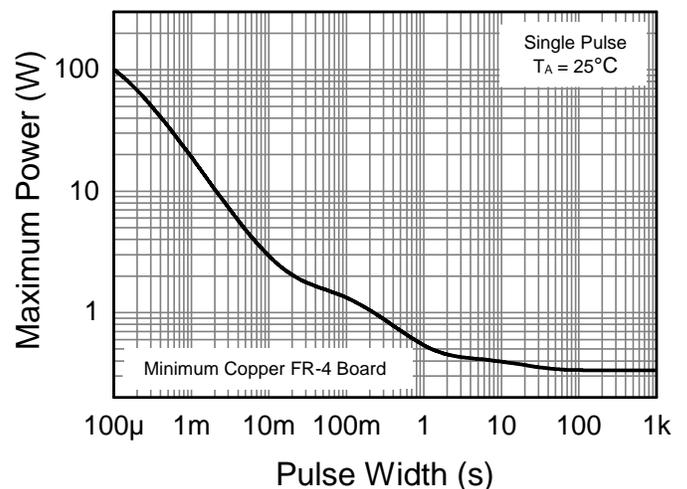
Thermal Characteristics and Derating Information



Derating Curve



Transient Thermal Impedance



Pulse Power Dissipation

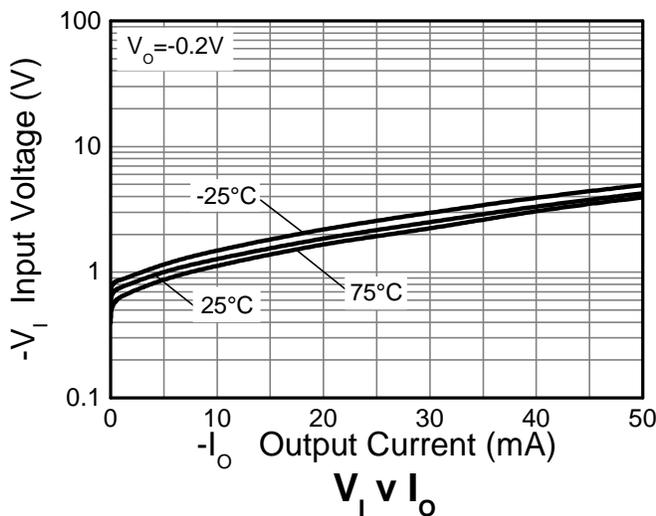
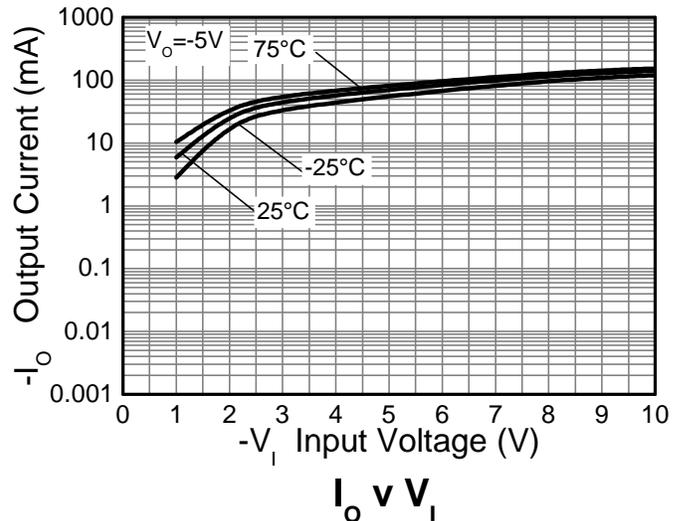
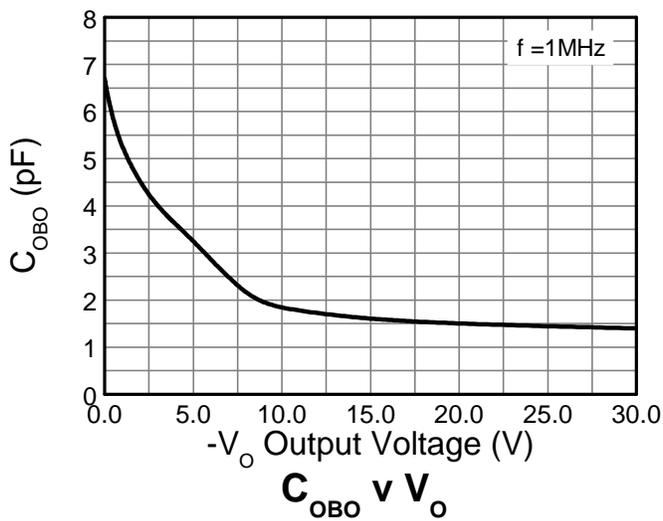
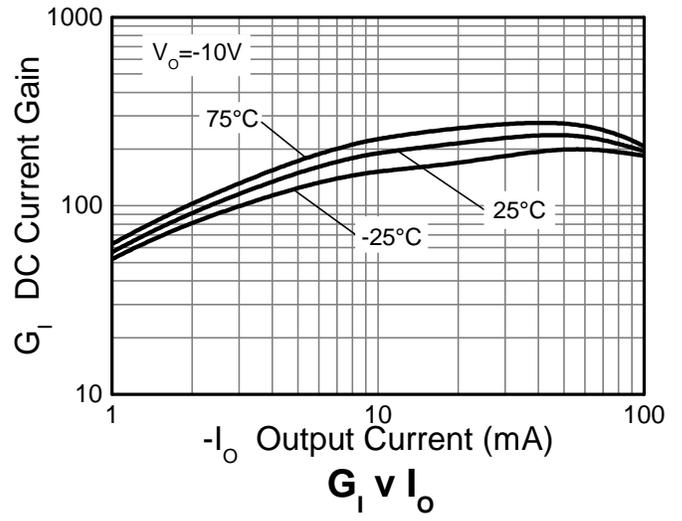
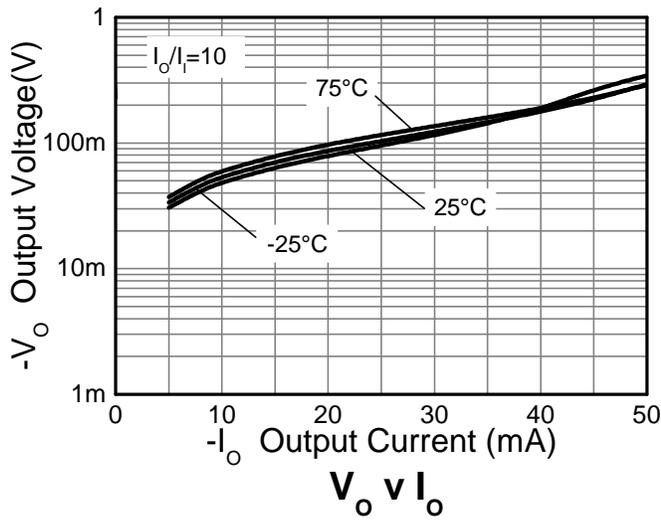
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage	V _{I(off)} (Note 6)	-0.3	—	—	V	V _{CC} = -5V, I _O = -100μA
	V _{I(on)} (Note 7)	—	—	-1.4		V _O = -0.3V, I _O = -1mA
Output Voltage	V _{O(on)}	—	-0.1	-0.3	V	I _O /I _I = -5mA / -0.25mA
Input Current	I _I	—	—	-0.88	mA	V _I = -5V
Output Current	I _{O(off)}	—	—	-0.5	μA	V _{CC} = -50V, V _I = 0V
DC Current Gain	G _I	68	—	—	—	V _O = -5V, I _O = -10mA
Input Resistor (R ₁) Tolerance	ΔR ₁	-30	—	+30	%	—
Resistance Ratio Tolerance	ΔR ₂ /R ₁	-20	—	+20	%	—
Gain-Bandwidth Product (Note 8)	f _T	—	250	—	MHz	V _{CE} = -10V, I _E = -5mA, f = 100MHz

Notes:

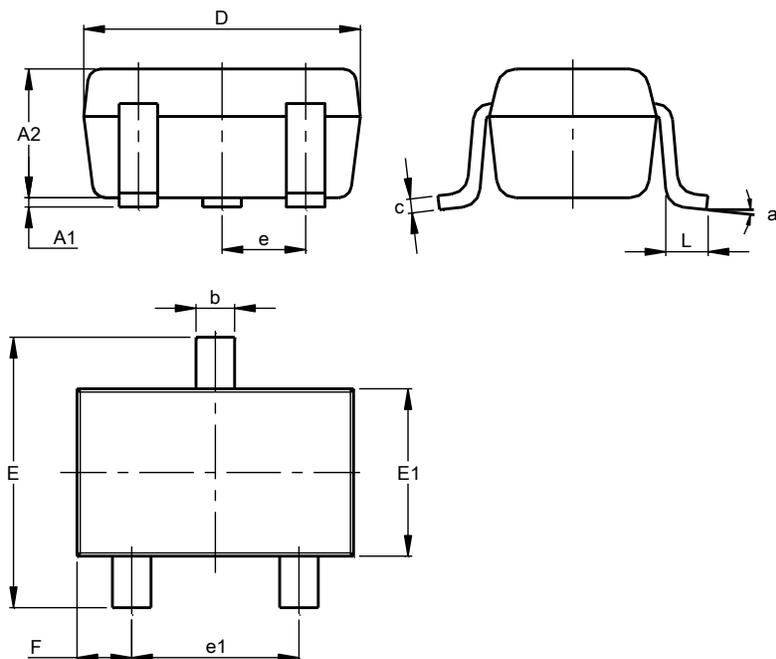
- 6. Guarantees that the device will be switched OFF if the Input Voltage is less than -0.3V.
- 7. Guarantees that the device will be switched ON if the Input Voltage is more than -1.4V.
- 8. Transistor - For Reference Only.

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



Package Outline Dimensions

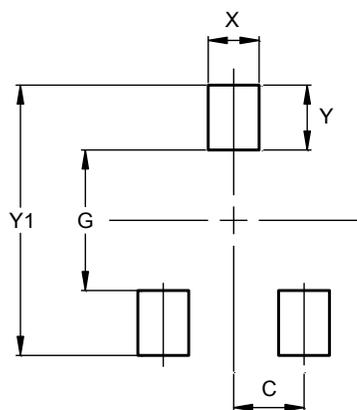
SOT323



SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	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		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

SOT323



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500