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

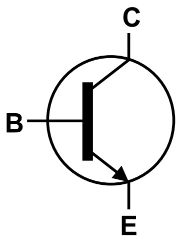
- BV_{CEO} > 50V
- I_C = 150mA Collector Current
- Low Saturation Voltage $V_{CE(sat)}$ < 400mV @ 50mA
- Epitaxial Planar Die Construction
- Ideal for Medium Power Amplification and Switching

Mechanical Data

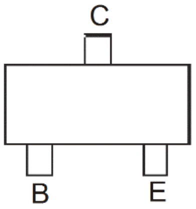
- Case: SOT23
- Case Material: molded plastic, “Green” molding compound
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.008 grams (approximate)

SOT23

Top View



Device Symbol



Top View
Pin-Out

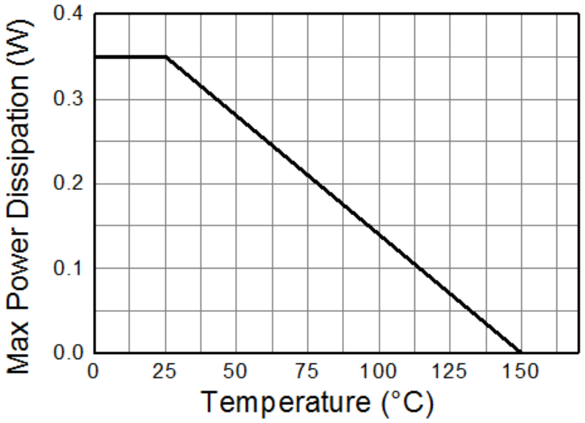
Maximum Ratings (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Continuous Collector Current	I_C	150	mA

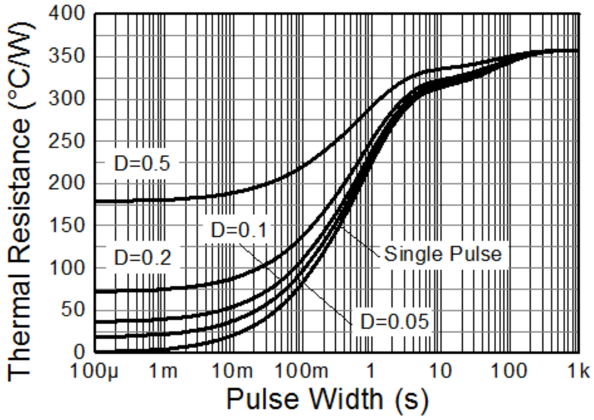
Thermal Characteristics (@ T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 5)	P_D	310	mW
	(Note 6)		350	
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	403	°C/W
	(Note 6)		357	
Thermal Resistance, Junction to Leads	(Note 7)	$R_{\theta JL}$	350	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

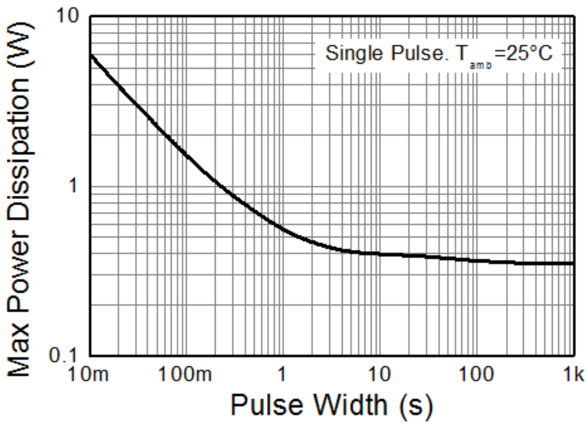
Notes:
5. For the device mounted on minimum recommended pad layout FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.
6. For the device mounted on 15mm x 15mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.
7. Thermal resistance from junction to solder-point (at the end of the leads).



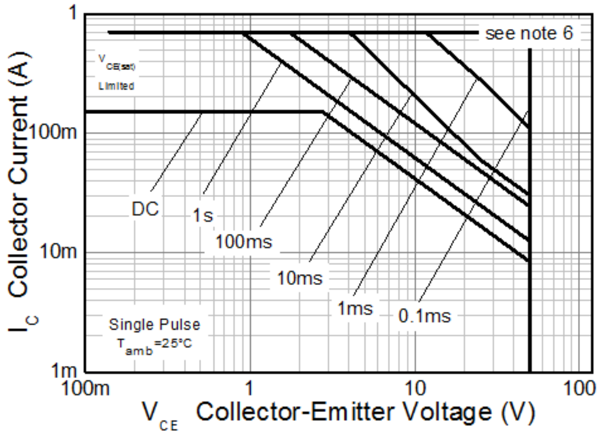
Derating Curve



Transient Thermal Impedance



Pulse Power Dissipation



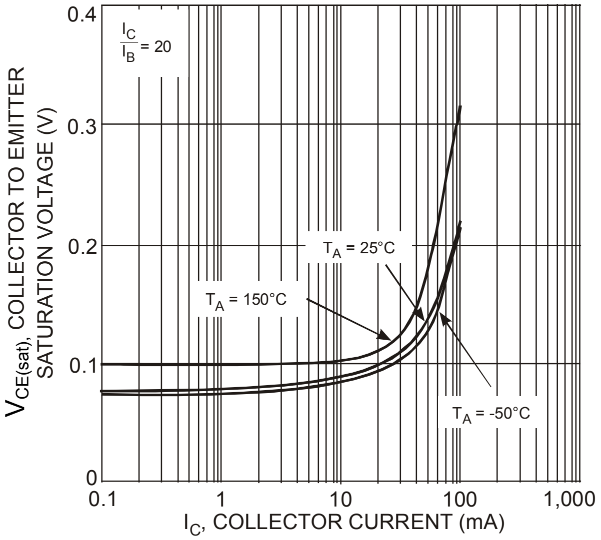
Safe Operating Area

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

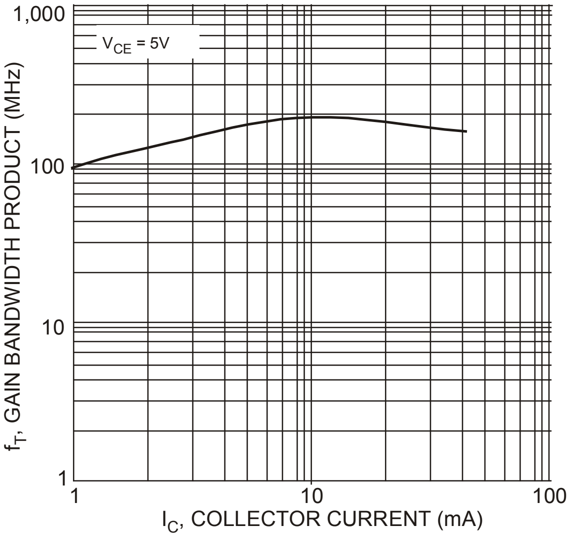
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	BV_{CBO}	60	—	—	V	I_C = 100μA, I_E = 0
Collector-Emitter Breakdown Voltage (Note 8)	BV_{CEO}	50	—	—	V	I_C = 10mA, I_B = 0
Emitter-Base Breakdown Voltage	BV_{EBO}	7.0	—	—	V	I_E = 100μA, I_C = 0
Collector Cutoff Current	I_{CBO}	—	—	100	nA	V_{CB} = 60V
Base Cutoff Current	I_{EBO}	—	—	100	nA	V_{EB} = 6.0V
ON CHARACTERISTICS (Note 8)						
DC Current Gain	h_{FE}	180	—	390	—	I_C = 1.0mA, V_{CE} = 6.0V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	0.2	0.4	V	I_C = 50mA, I_B = 5.0mA
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C_{obo}	—	2.0	3.5	pF	V_{CB} = 5.0V, f = 1.0MHz, I_E = 0
Transition Frequency	f_T	80	180	—	MHz	V_{CE} = 12V, I_C = 2mA, f = 100MHz

. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%

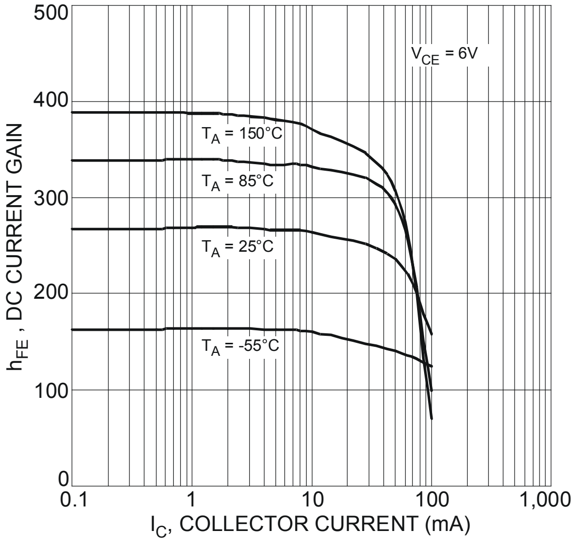
Note: 8 .



$V_{CE(sat)}$ v I_C



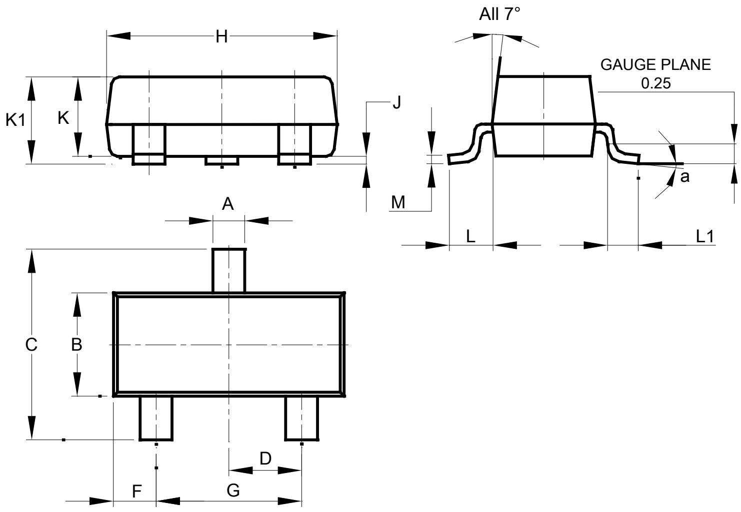
f_T v I_C



h_{FE} v I_C

Package Outline Dimensions

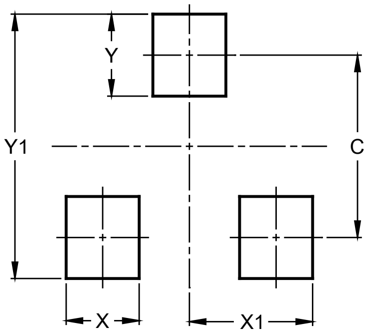
SOT23



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