



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

- $BV_{CEO} > 15V$
- $I_C = 5A$ Continuous Collector Current
- $I_{CM} = 15A$ Peak Pulse Current
- $R_{CE(SAT)} = 29m\Omega$ for a Low Equivalent On-Resistance
- Very Low Saturation Voltage (70mV max @ 1A)

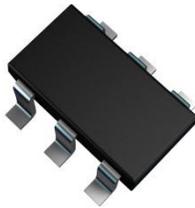
Mechanical Data

- Case: SOT26
- 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: 0.015 grams (Approximate)

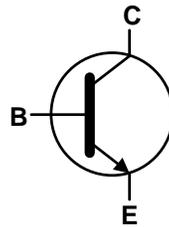
Applications

- DC-DC Converters
- Power Management Functions
- Power Switches
- Motor Control

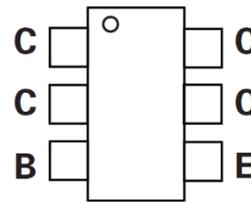
SOT26



Top View



Device Symbol



Top View
Pin-Out

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	40	V
Collector-Emitter Voltage	V _{CEO}	15	V
Emitter-Base Voltage	V _{EBO}	7.5	V
Base Current	I _B	500	mA
Continuous Collector Current	I _C	5	A
Peak Pulse Collector Current	I _{CM}	15	A

Thermal Characteristics

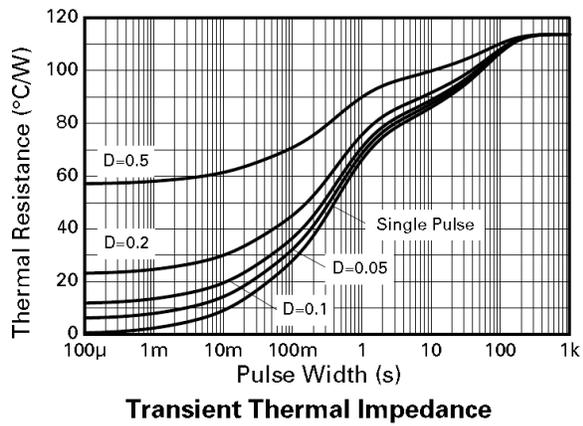
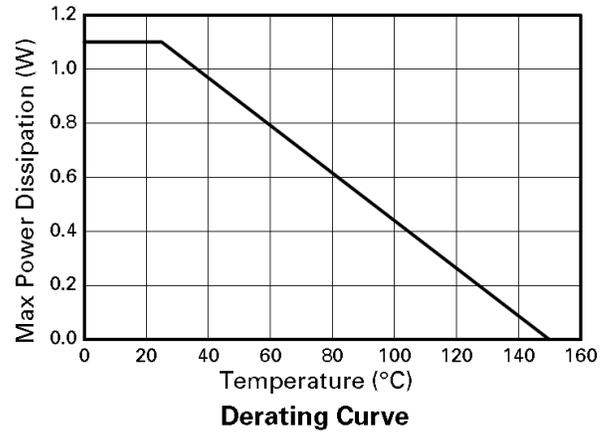
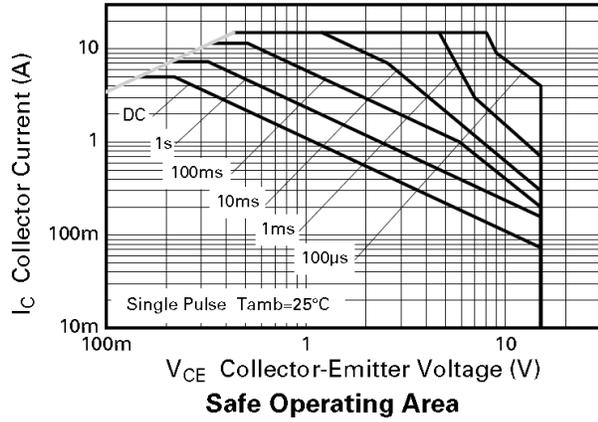
Characteristic	Symbol	Value	Unit
Power Dissipation	P _D	1.1	W
		8.8	
Linear Derating Factor		1.7	mW/°C
		13.6	
Thermal Resistance, Junction to Ambient	R _{θJA}	113	°C/W
		73	
Thermal Resistance, Junction to Lead	R _{θJL}	18.6	
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

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:
- For a device mounted with the collector lead on 25mm x 25mm 1oz copper that is on single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
 - Same as Note 6, except the device is measured at t ≤ 5 sec.
 - Thermal resistance from junction to solder-point (at the end of the collector lead).
 - Refer to JEDEC specification JESD22-A114 and JESD22-A115.

Thermal Characteristics and Derating Information

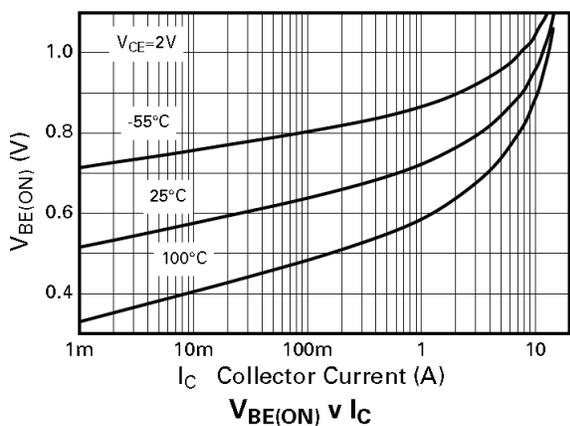
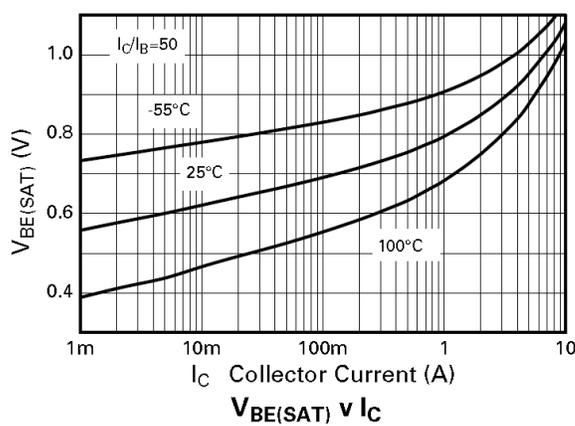
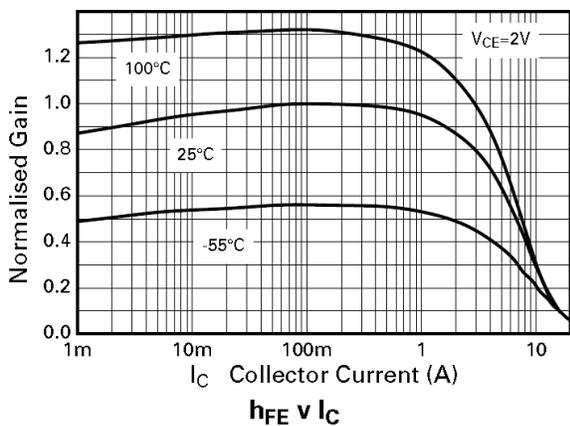
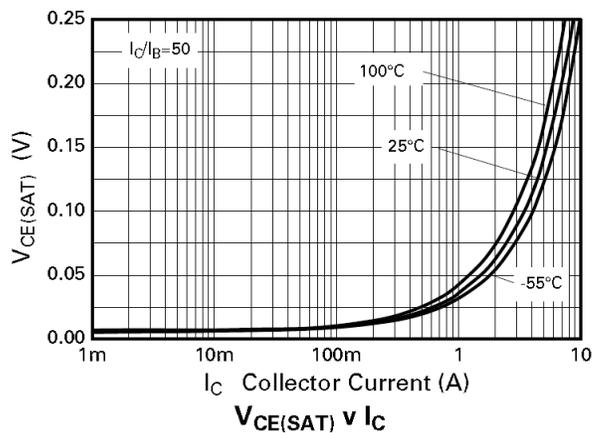
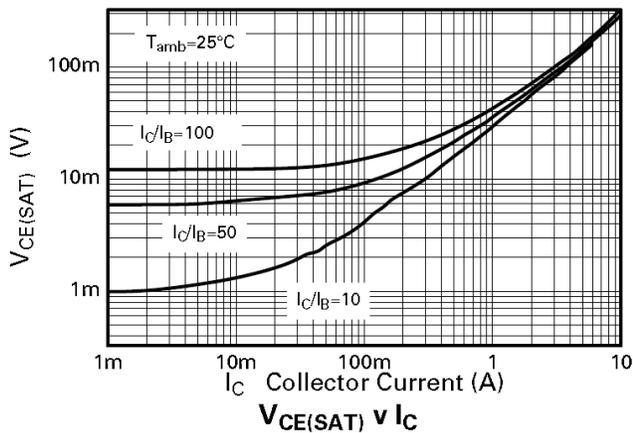


Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

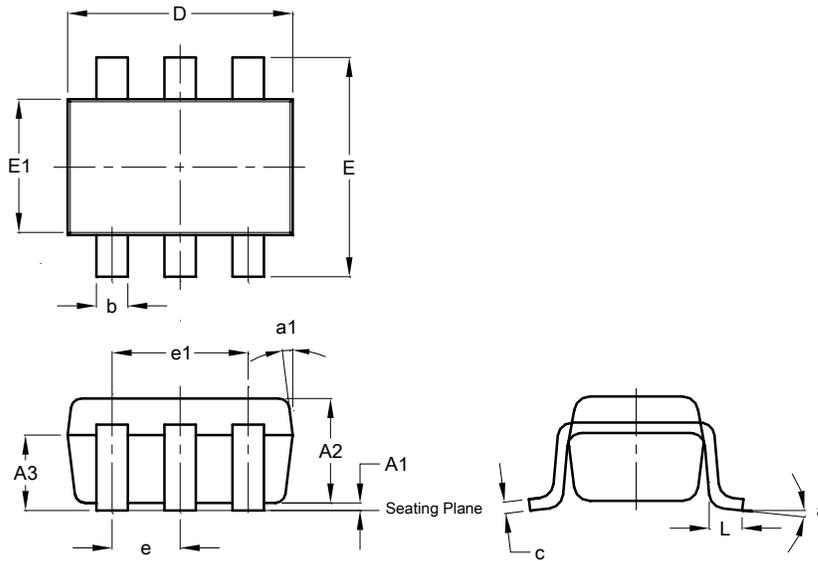
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	BV _{CBO}	40	85	—	V	I _C = 100μA
Collector-Emitter Breakdown Voltage (Note 9)	BV _{CEO}	15	22	—	V	I _C = 10mA
Emitter-Base Breakdown Voltage	BV _{EBO}	7.5	8.5	—	V	I _E = 100μA
Collector-Base Cutoff Current	I _{CBO}	—	—	100	nA	V _{CB} = 32V
Emitter Cutoff Current	I _{EBO}	—	—	100	nA	V _{EB} = 6V
Collector-Emitter Cutoff Current	I _{CES}	—	—	100	nA	V _{CES} = 32V
ON CHARACTERISTICS (Note 9)						
DC Current Gain	h _{FE}	250	400	—	—	I _C = 10mA, V _{CE} = 2V
		300	450	900		I _C = 1A, V _{CE} = 2V
		200	300	—		I _C = 5A, V _{CE} = 2V
		20	50	—		I _C = 15A, V _{CE} = 2V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	—	5	8	mV	I _C = 100mA, I _B = 10mA
		—	45	70		I _C = 1A, I _B = 10mA
		—	130	190		I _C = 4A, I _B = 40mA
		—	145	200		I _C = 5A, I _B = 100mA
Base-Emitter Saturation Voltage	V _{BE(sat)}	—	—	1	V	I _C = 5A, I _B = 100mA
Base-Emitter Turn-On Voltage	V _{BE(on)}	—	—	0.9	V	I _C = 5A, V _{CE} = 2V
SMALL SIGNAL CHARACTERISTICS						
Current Gain-Bandwidth Product	f _T	—	72	—	MHz	V _{CE} = 10V, I _C = 50mA, f = 50MHz
Output Capacitance	C _{obo}	—	76	—	pF	V _{CB} = 10V, f = 1MHz
Turn-On Time	t _(on)	—	92	—	ns	V _{CC} = 10V, I _C = 3A
Turn-Off Time	t _(off)	—	340	—	ns	I _{B1} = I _{B2} = 60mA

Note: 9. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

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

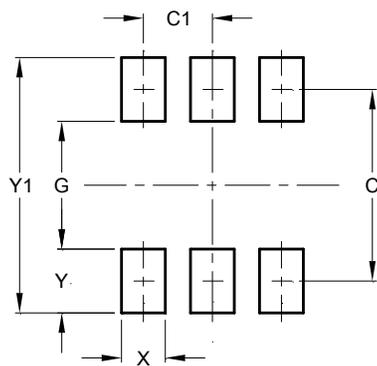


Package Outline Dimensions



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



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