



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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企业微信二维码



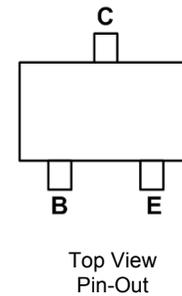
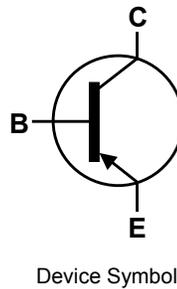
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Features

- $BV_{CEO} > -20V$
- $I_C = -1A$ Continuous Collector Current
- $I_{CM} = -3A$ Peak Pulse Current
- Low Saturation Voltage -250mV Max @ $I_C = -1A$.
- $R_{CE(SAT)} = 200m\Omega$ @ 1A for a Low Equivalent On-Resistance
- 500mW Power Dissipation
- Excellent h_{FE} Characteristics up to 3A
- Complementary NPN Type: NK-ZUMT618

Mechanical Data

- Case: SOT323
- Case 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 
- Weight: 0.006 grams (approximate)



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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	-20	V
Collector-Emitter Voltage	V_{CE0}	-20	V
Emitter-Base Voltage	V_{EBO}	-7	V
Peak Pulse Current	I_{CM}	-3	A
Continuous Collector Current	I_C	-1	A
Base Current	I_B	-200	mA

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

Characteristic	Symbol	Value	Unit
Power Dissipation	P_D	385	mW
		500	
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	325	$^{\circ}\text{C/W}$
		250	
Thermal Resistance, Junction to Leads	$R_{\theta JL}$	350	$^{\circ}\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$

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

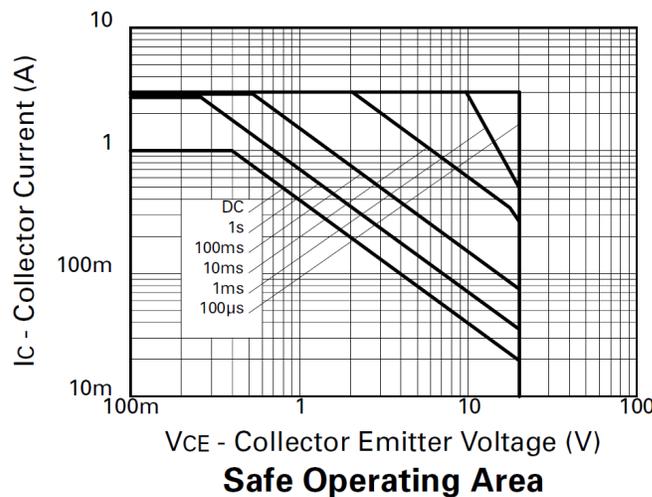
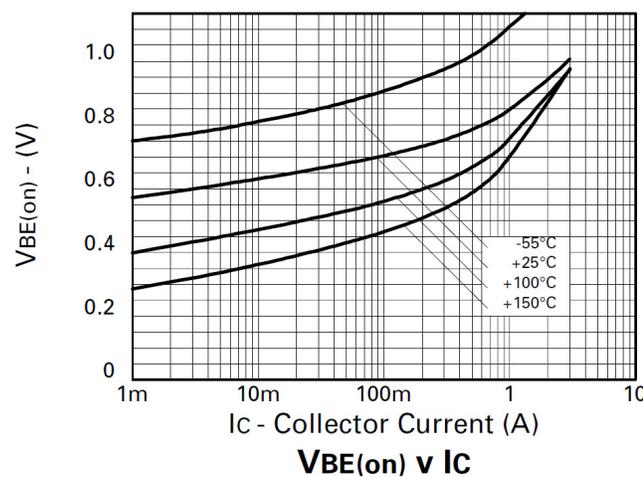
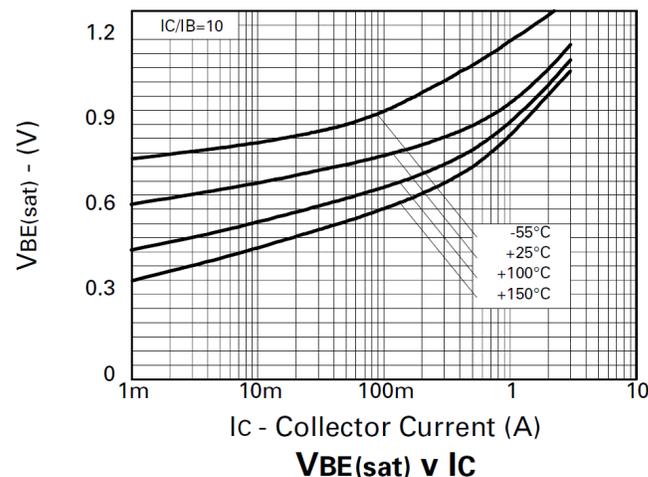
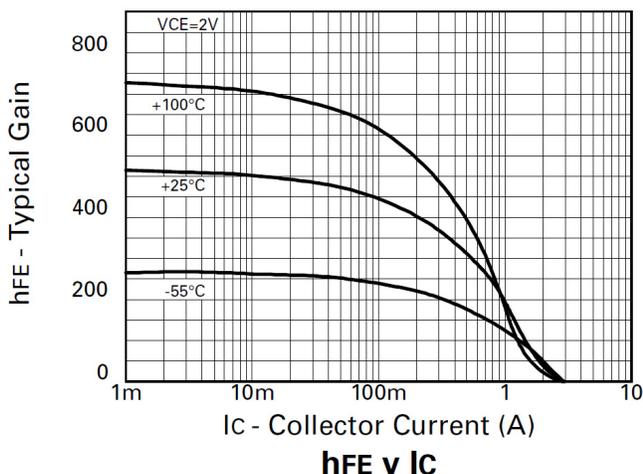
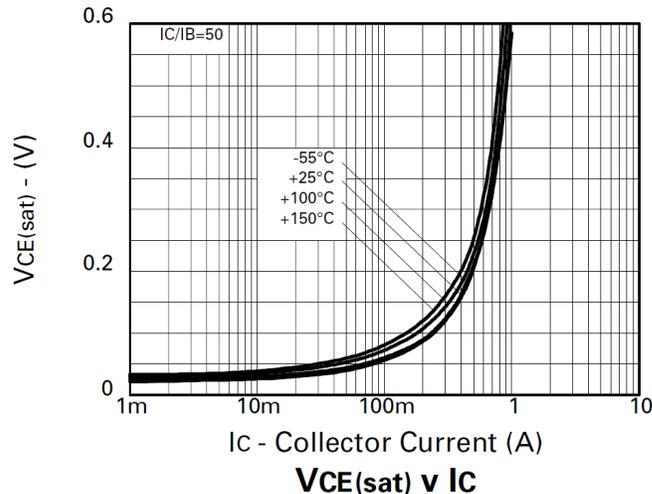
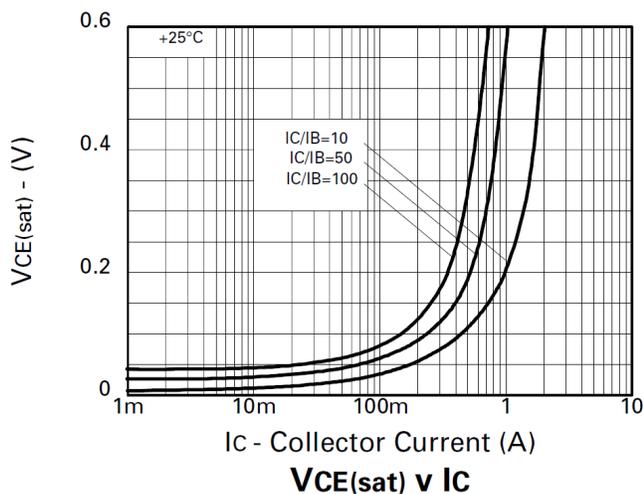
- Notes:
5. For a device mounted with collector lead on 10mm x 8mm 1oz copper that is on a single-sided 0.6mm FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
 6. Same as note (5), except the collector lead is on a 25mm x 25mm 1oz copper.
 7. Thermal resistance from junction to solder-point (at the end of the leads).
 8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

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

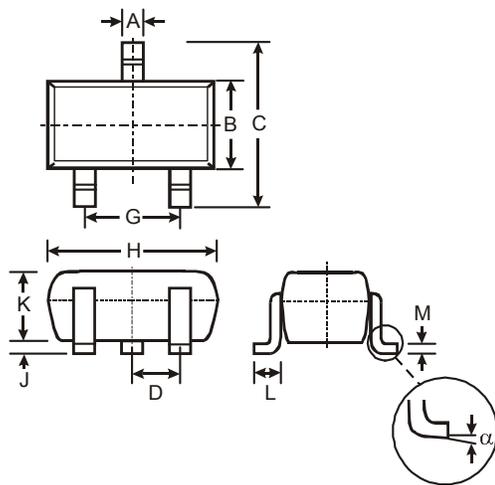
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 9)						
Collector-Base Breakdown Voltage	V _{CB0}	-20	—	—	V	I _C = -100μA
Collector-Emitter Breakdown Voltage	V _{CEO}	-20	—	—	V	I _C = -10mA
Emitter-Base Breakdown Voltage	V _{EBO}	-7	—	—	V	I _E = -100μA
Collector-Base Cutoff Current	I _{CB0}	—	—	-10	nA	V _{CB} = -15V
Emitter-Base Cutoff Current	I _{EBO}	—	—	-10	nA	V _{EB} = -4.0V
Collector-Emitter Cutoff Current	I _{CES}	—	—	-10	nA	V _{CES} = -15V
ON CHARACTERISTICS (Note 9)						
DC Current Gain	h _{FE}	300	490	—	—	I _C = -10mA, V _{CE} = -2.0V
		300	450			
		200	315			
		100	160			
		20	75			
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	—	-33.5	-45	mV	I _C = -0.1A, I _B = -10mA
			-80	-110	mV	I _C = -0.25A, I _B = -10mA
			-130	-175	mV	I _C = -0.5A, I _B = -20mA
			-180	-250	mV	I _C = -1A, I _B = -100mA
Base-Emitter Saturation Voltage	V _{BE(SAT)}	—	-970	-1100	mV	I _C = -1A, I _B = 100mA
Base-Emitter Turn-On Voltage	V _{BE(ON)}	—	-850	-1100	mV	I _C = -1A, V _{CE} = -2.0V
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C _{obo}	—	11	—	pF	V _{CB} = -10V, f = 1MHz
Turn-On Time	t _(on)	—	60	—	ns	V _{CC} = -10V, I _C = -1A,
Turn-Off Time	t _(off)	—	135	—	ns	I _{B1} = -I _{B2} = -100mA
Current Gain-Bandwidth Product	f _T	—	210	—	MHz	V _{CE} = -10V, I _C = -50mA, f = 100MHz

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

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

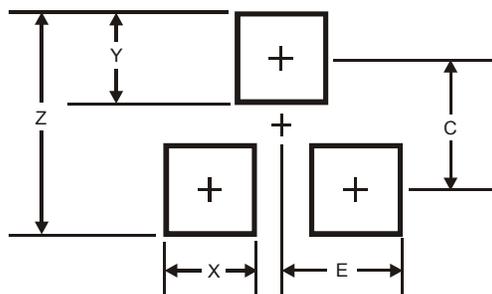


Package Outline Dimensions



SOT323			
Dim	Min	Max	Typ
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.8
X	0.7
Y	0.9
C	1.9
E	1.0