



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

0755-83047638

ysbdt@szyoushang.cn

www.szyoushang.cn



企业微信二维码



企业QQ二维码

Features

- $BV_{CEO} > -100V$
- Maximum Continuous Collector Current $I_C = -1A$
- $V_{CE(sat)} < -220mV @ -1A$
- $R_{CE(sat)} = 150m\Omega$
- 7V reverse blocking voltage
- High peak current
- Complementary part number NK-ZXTN25100CFH

Mechanical Data

- Case: SOT23
- UL Flammability Rating 94V-0
- Case material: molded Plastic.
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish; Solderable per MIL-STD-202, Method 208 
- Weight: 0.008 grams (Approximate)

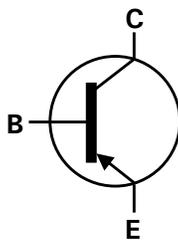
Applications

- MOSFET and IGBT gat driving
- DC – DC converters
- Motor drive
- High side driver

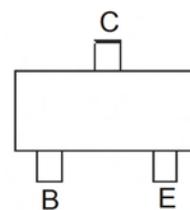
SOT23



Top View



Device Symbol



Top View
Pin-Out

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

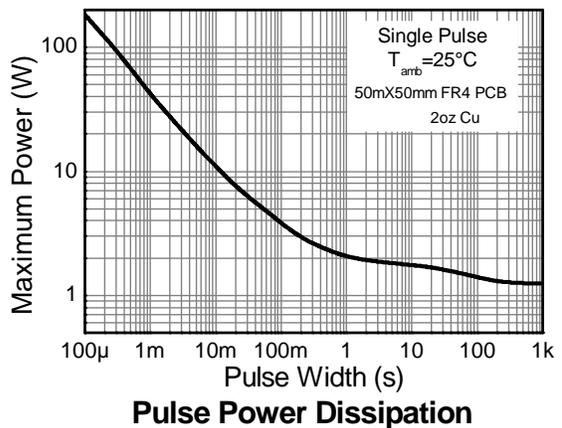
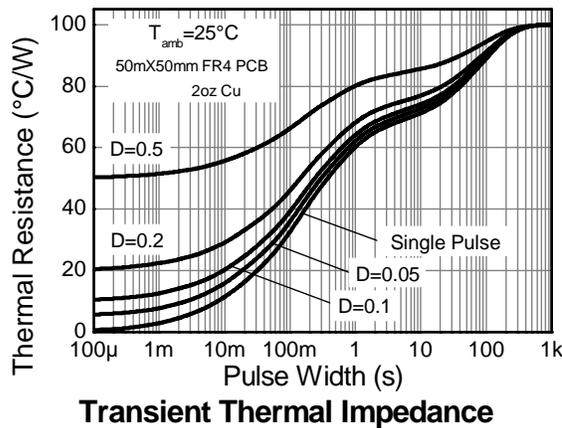
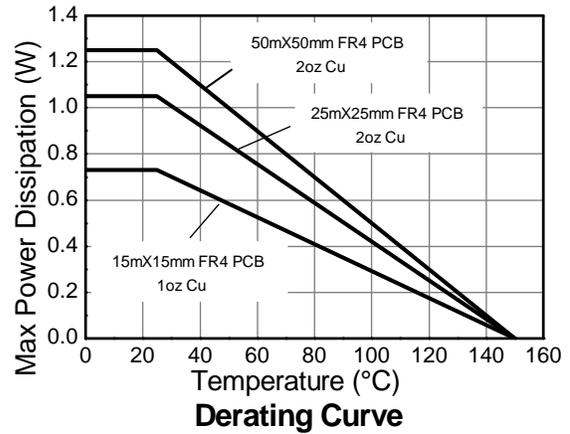
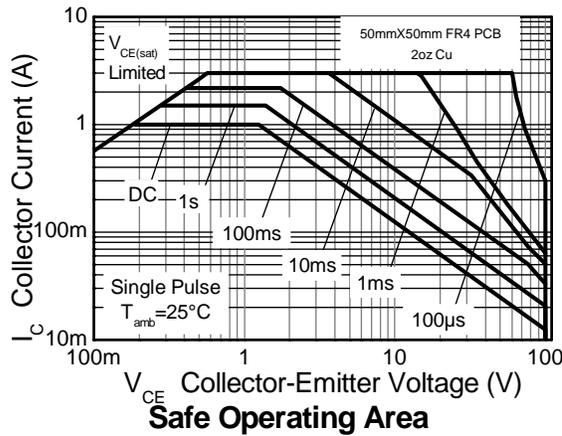
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-115	V
Collector-Emitter Voltage	V_{CEO}	-100	V
Emitter-collector voltage (reverse blocking)	V_{ECO}	-7	V
Emitter-Base Voltage	V_{EBO}	-7	V
Continuous Collector Current (Note 5)	I_C	-1	A
Base Current	I_B	-500	mA
Peak Pulse Current	I_{CM}	-3	A

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

Characteristic		Symbol	Value	Unit
Collector Power Dissipation	(Note 5)	P_D	0.73	W
	(Note 6)		1.05	
	(Note 7)		1.25	
	(Note 8)		1.81	
Thermal Resistance, Junction to Ambient	(Note 5)	$R_{\theta JA}$	171	$^\circ\text{C/W}$
	(Note 6)		119	
	(Note 7)		100	
	(Note 8)		69	
Thermal Resistance, Junction to Leads	(Note 9)	$R_{\theta JL}$	75.25	$^\circ\text{C/W}$
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

- Notes:
5. For the device mounted on 15mm X 15mm X 1.6mm FR4 PCB with high coverage of single sided 1oz copper in still air condition;
 6. Mounted on 25mm X 25mm X 1.6mm FR4 PCB with high coverage of single sided 2oz copper in still air condition
 7. Mounted on 25mm X 25mm X 1.6mm FR4 PCB with high coverage of single sided 2oz copper in still air condition
 8. As Note 7 above, measured at $t < 5$ secs.
 9. Thermal resistance from junction to solder-point (at the end of the collector lead).

Thermal Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

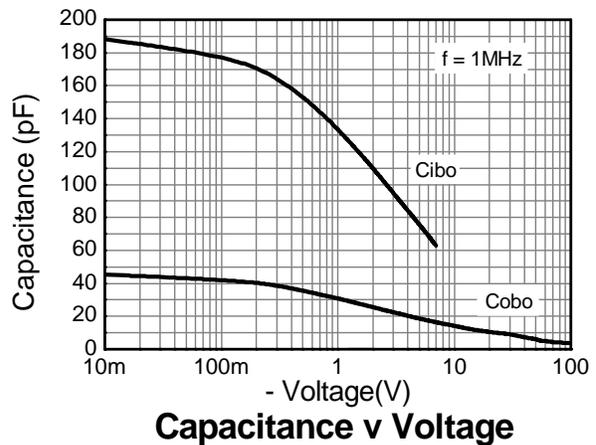
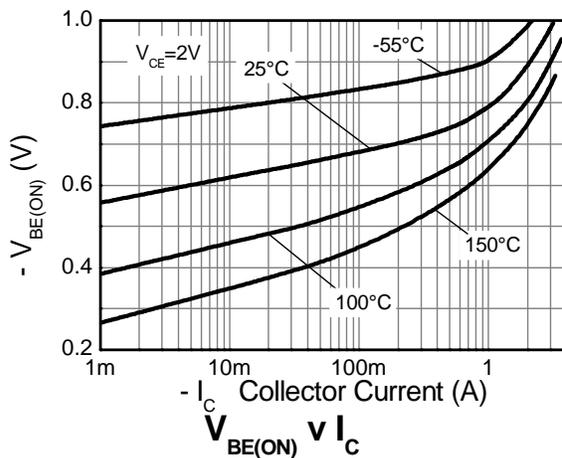
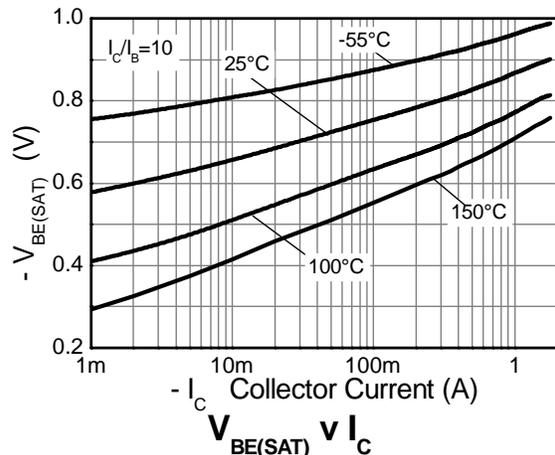
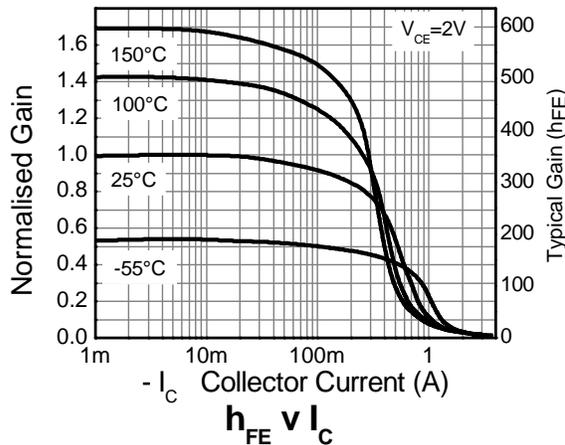
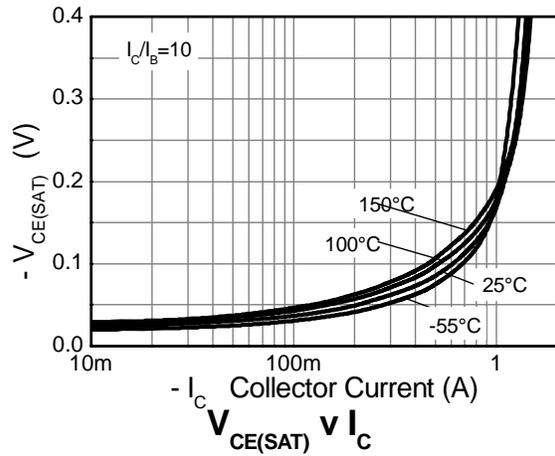
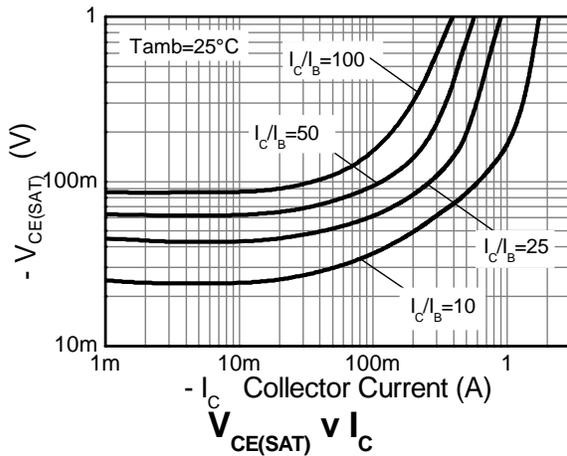


Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

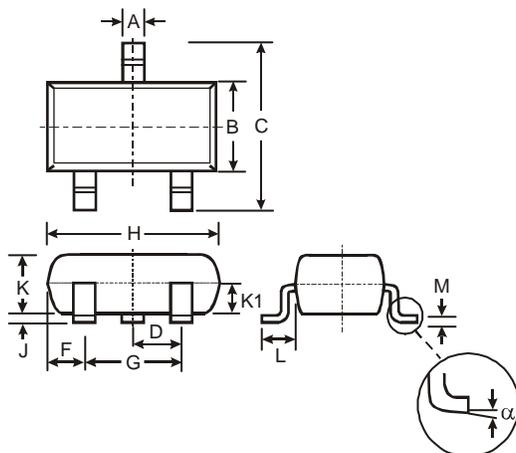
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	-115	-180	-	V	I _C = -100μA
Collector-Emitter Breakdown Voltage (Note 10)	BV _{CEO}	-100	-140	-	V	I _C = -10mA
Emitter-Base Breakdown Voltage	BV _{EBO}	-7	-8.4	-	V	I _E = -100μA
Emitter-Base Breakdown Voltage	BV _{ECX}	-7	-8.3	-	V	I _E = -100μA, R _{BC} < 1kΩ or -0.25 < V _{BC} < 0.25V
Emitter-Base Breakdown Voltage	BV _{ECO}	-7	-8.8	-	V	I _E = -100μA
Collector-Base Cutoff Current	I _{CBO}	-	< -1	-50	nA	V _{CB} = -115V
		-	-	-0.5	μA	V _{CB} = -115V, T _{amb} = 100°C
Collector-Emitter Cutoff Current	I _{CEX}	-	-	-100	nA	V _{CE} = -90V, R _{BE} < 1kΩ or -0.25V < V _{BE} < 1V
Emitter-Base Cutoff Current	I _{EBO}	-	< -1	-50	nA	V _{EB} = -5.6V
Static Forward Current Transfer Ratio (Note 10)	h _{FE}	200	350	500	-	I _C = -10mA, V _{CE} = -2V
		180	320	-		I _C = -100mA, V _{CE} = -2V
		110	190	-		I _C = -500mA, V _{CE} = -2V
		20	35	-		I _C = -1A, V _{CE} = -2V
Collector-Emitter Saturation Voltage (Note 10)	V _{CE(sat)}	-	-140	-210	mV	I _C = -100mA, I _B = -1mA
		-	-80	-110		I _C = -500mA, I _B = -50mA
		-	-180	-310		I _C = -500mA, I _B = -20mA
		-	-150	-220		I _C = -1A, I _B = -100mA
Base-Emitter Saturation Voltage (Note 10)	V _{BE(sat)}	-	-849	-950	mV	I _C = -1A, I _B = -100mA
Base-Emitter Saturation Voltage (Note 10)	V _{BE(on)}	-	-790	-900	mV	I _C = -1A, V _{CE} = -2V
Output Capacitance	C _{obo}	-	14.1	20	pF	V _{CB} = -10V, f = 1MHz
Transition Frequency	f _T	-	180	-	MHz	V _{CE} = -15V, I _C = -20mA, f = 100MHz
Delay Time	t _(d)	-	15.8	-	ns	V _{CC} = -10V, I _C = -500mA, I _{B1} = I _{B2} = -50mA
Rise Time	t _(r)	-	41	-	ns	
Storage Time	t _(s)	-	411	-	ns	
Fall Time	t _(f)	-	89	-	ns	

Notes: 10. Measured under pulsed conditions. Pulse width ≤ 300 μs. Duty cycle ≤ 2%

Typical Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

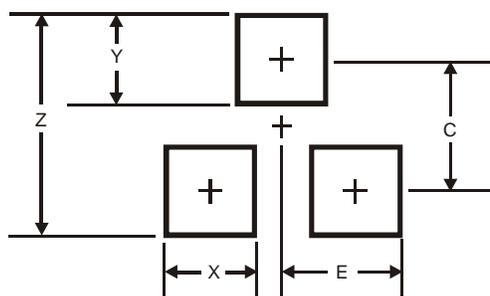


Package Outline Dimensions



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	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35