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

0755-83047638
ysbdt@szyoushang.cn
www.szyoushang.cn

企业微信二维码

企业QQ二维码

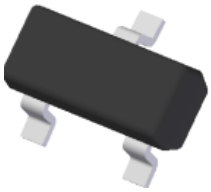
Features

- BV_{CEO} > -45V
- I_C = -800mA High Continuous Collector Current
- Low Saturation Voltage $V_{CE(sat)}$ < -300mV @ 100mA
- Complementary NPN Type: NK-BCW66H

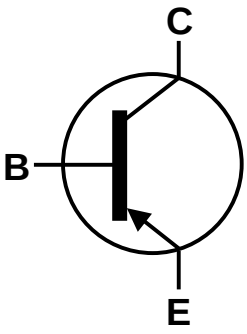
Mechanical Data

- Package: SOT23
- Package 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)

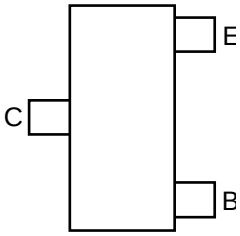
SOT23



Top View



Device Symbol



Top View
Pin Configuration

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CES}	-60	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-7	V
Continuous Collector Current	I_C	-800	mA
Peak Pulse Current	I_{CM}	-1000	mA
Base Current	I_B	-100	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

ESD Ratings (Note 8)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge – Human Body Model	ESD HBM	4000	V	3A
Electrostatic Discharge – Charged Device Model	ESD CDM	1000	V	C3
Electrostatic Discharge – Machine Model	ESD MM	400	V	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 condition; the device is measured when operating in a steady-state condition.
6. Same as Note 5, except the device is mounted on 15mm × 15mm FR4 PCB.
7. Thermal resistance from junction to solder-point (at the end of the leads).
8. Refer to JEDEC specification JS-001-2017, JS-002-2022 and JESD22-A115C.

Thermal Characteristics

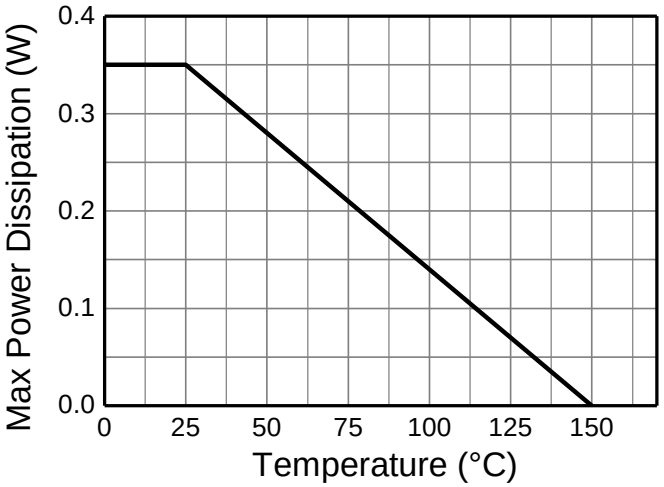


Figure 1. Derating Curve

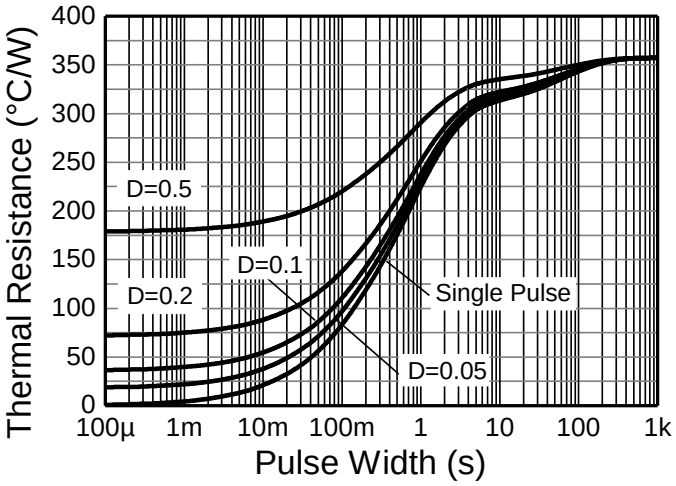


Figure 2. Transient Thermal Impedance

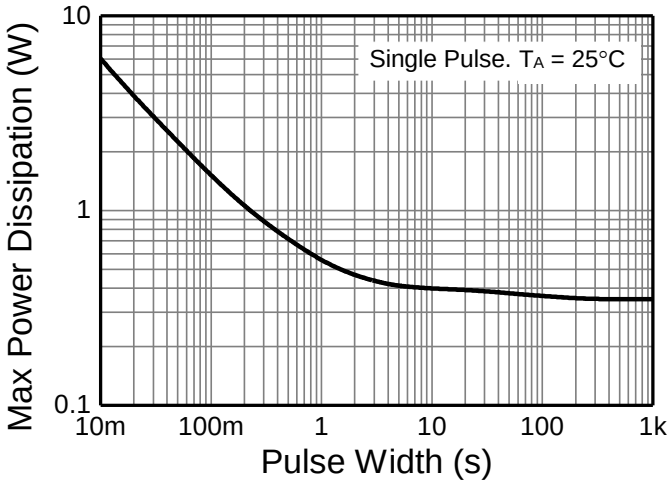


Figure 3. Pulse Power Dissipation

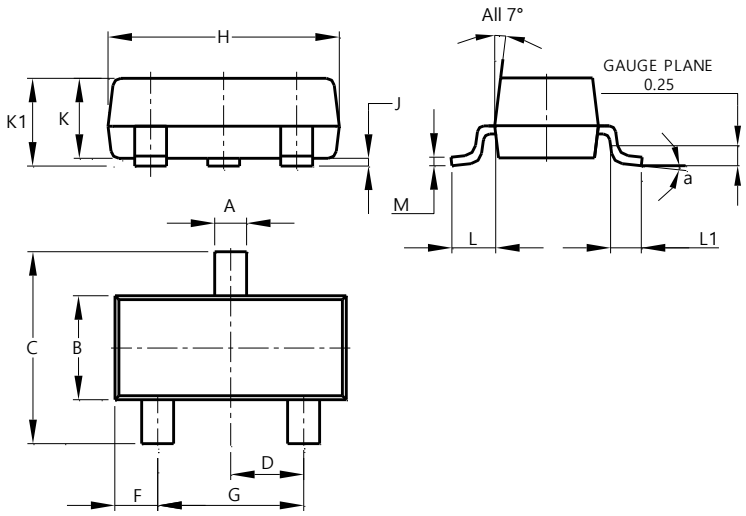
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	BV_{CES}	-60	—	—	V	I_C = -10μA
Collector-Emitter Breakdown Voltage (Base Open) (Note 9)	BV_{CEO}	-45	—	—	V	I_{CEO} = -10mA
Emitter-Base Breakdown Voltage	BV_{EBO}	-7	—	—	V	I_{EBO} = -10μA
Collector-Emitter Cut-Off Current	I_{CES}	— —	< 1 —	-20 -10	nA μA	V_{CES} = -45V V_{CES} = -45V, T_A = +150°C
Emitter-Base Cut-Off Current	I_{EBO}	—	< 1	-20	nA	V_{EBO} = -5.6V
ON CHARACTERISTICS (Note 9)						
Static Forward Current Transfer Ratio	h_{FE}	180 250 100	— 350 —	— 630 —	—	I_C = -10mA, V_{CE} = -1V I_C = -100mA, V_{CE} = -1V I_C = -500mA, V_{CE} = -2V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	— —	— -700	-300 —	mV	I_C = -100mA, I_B = -10mA I_C = -500mA, I_B = -50mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	—	—	-2	V	I_C = -500mA, I_B = -50mA
SMALL SIGNAL CHARACTERISTICS (Note 9)						
Transition Frequency	f_T	100	—	—	MHz	I_C = -20mA, V_{CE} = -10V, f = 100MHz
Output Capacitance	C_{obo}	—	12	18	pF	V_{CB} = -10V, f = 1MHz
Input Capacitance	C_{ibo}	—	—	80	pF	V_{CB} = -0.5V, f = 1MHz
Noise Figure	N	—	2	10	dB	I_C = -0.2mA, V_{CE} = -5V, R_G = 1kΩ, f = 1kHz, Δf = 200Hz
Turn-On Time	t_{on}	—	—	100	ns	I_C = -150mA, I_{B1} = -I_{B2} = -15mA, R_L = 150Ω
Turn-Off Time	t_{off}	—	—	400	ns	

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

Package Outline Dimensions

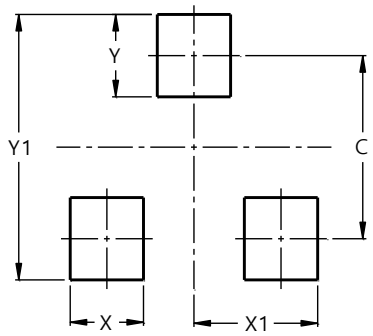
SOT23



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