重庆平伟实业股份有限公司
CHONGQING PINGWEI ENTERPRISE CO.,LTD

BSS138W

50V N-Channel MOSFET

220mA 50V；$R_{DS(ON)typ}$=1.0Ω@10V，$R_{DS(ON)typ}$=1.1Ω@4.5V

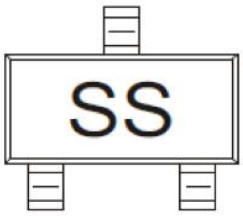
FEATURE

- High density cell design for extremely low $R_{DS(on)}$
- Rugged and Relaible

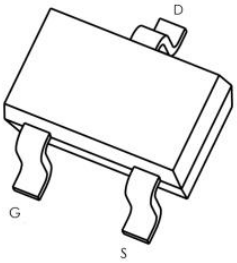
Application

- Direct Logic-Level Interface: TTL/CMOS
- Drivers: Relays, Solenoids, Lamps, Hammers,Display, Memories, Transistors, etc.
- Battery Operated Systems
- Solid-State Relays

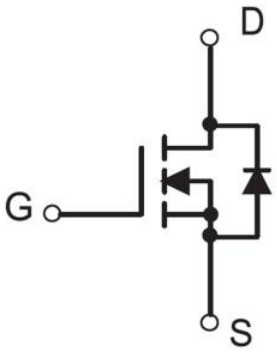
MARKING:



SOT-323



Schematic diagram



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	50	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	0.22	A
Power Dissipation	P_D	300	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	417	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

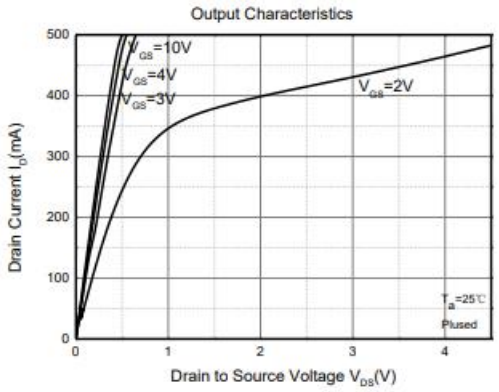
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

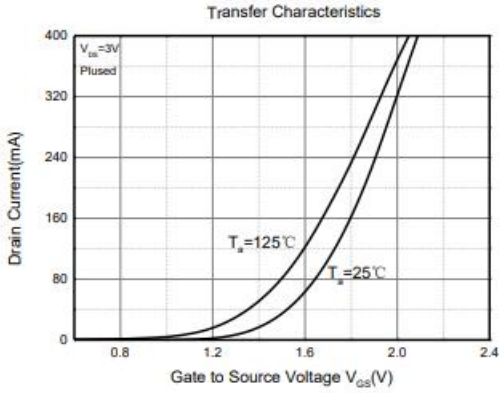
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	50			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =50V,V_{GS} = 0V			0.1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate threshold voltage(1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.8		1.5	V
Drain-source on-resistance(1)	$R_{DS(on)}$	V_{GS} =10V, I_D =220mA		1.2	3.5	Ω
		V_{GS} =4.5V, I_D =30mA		1.1	5.0	
		V_{GS} =4.5V, I_D =220mA		1.2	6.0	
3.Forward tranconductance(1)	g_{FS}	V_{DS} =10V, I_D =220mA		0.13		S
DYNAMIC CHARACTERISTICS(2)						
Input Capacitance	C_{iss}	V_{DS} =25V,V_{GS} =0V,f=1MHz		26.5		pF
Output Capacitance	C_{oss}			12.9		
Reverse Transfer Capacitance	C_{rss}			5.9		
SWITCHING CHARACTERISTICS(1,2)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V,V_{DD}=30V, I_D=290mA,R_G=6Ω			5	ns
Turn-on rise time	t_r				18	
Turn-off delay time	$t_{d(off)}$				36	
Turn-off fall time	t_f				14	
SOURCE-DRAIN DIODE CHARACTERISTICS(1)						
Diode Forward Voltage	V_{SD}	I_S=440mA, V_{GS} = 0V			1.4	V

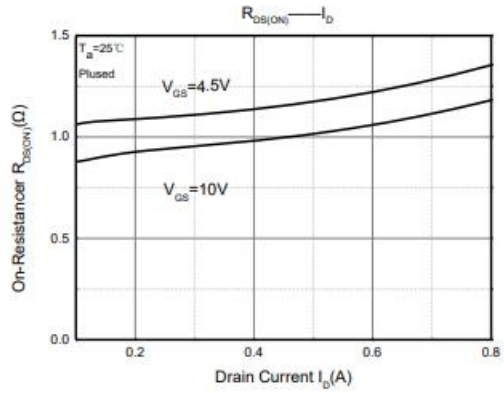
Notes:

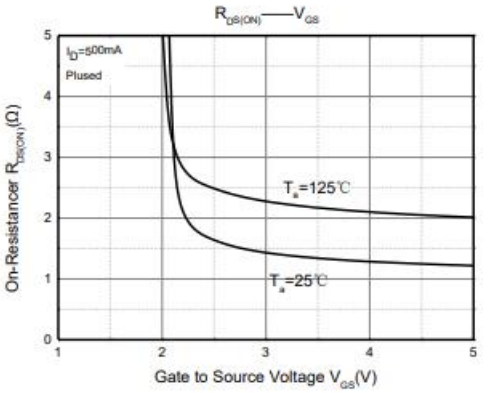
1. Pulse Test ; Pulse Width ≤300μs, Duty Cycle ≤2%.
2. These parameters have no way to verify.

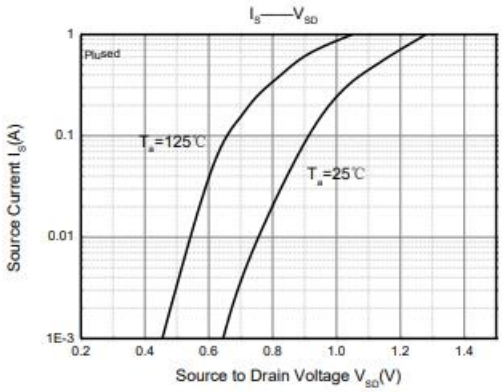
Typical Electrical and Thermal Characteristics

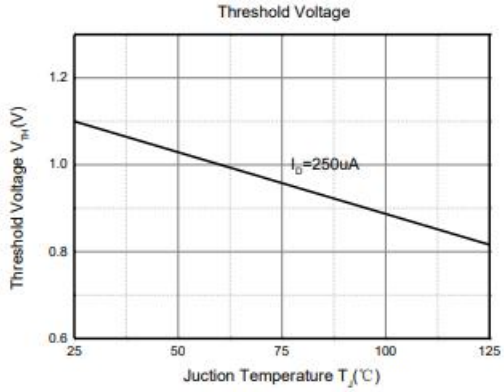




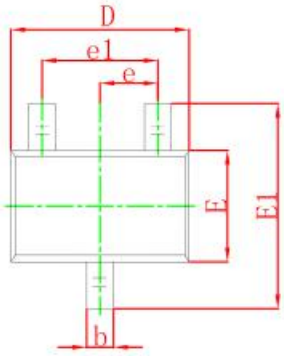


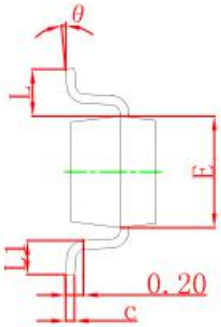


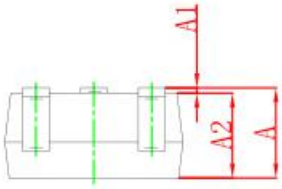




SOT-323 Package Information



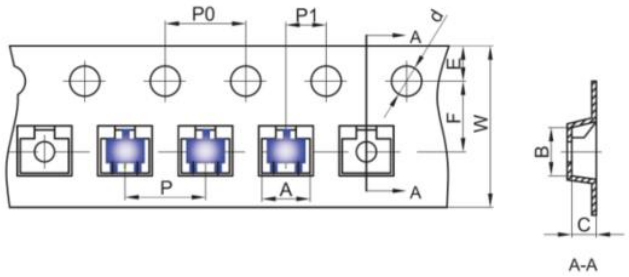




Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

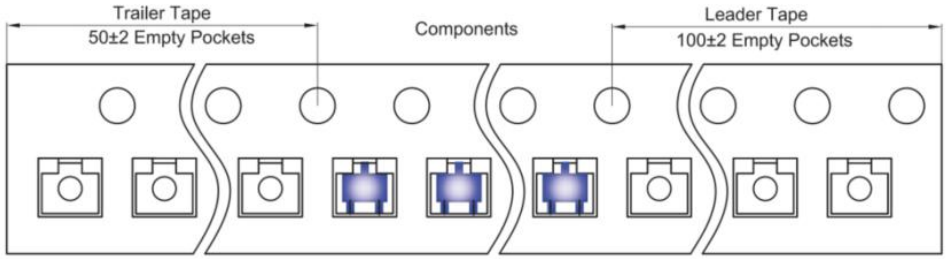
SOT-323 Tape and Reel

SOT-323 Embossed Carrier Tape

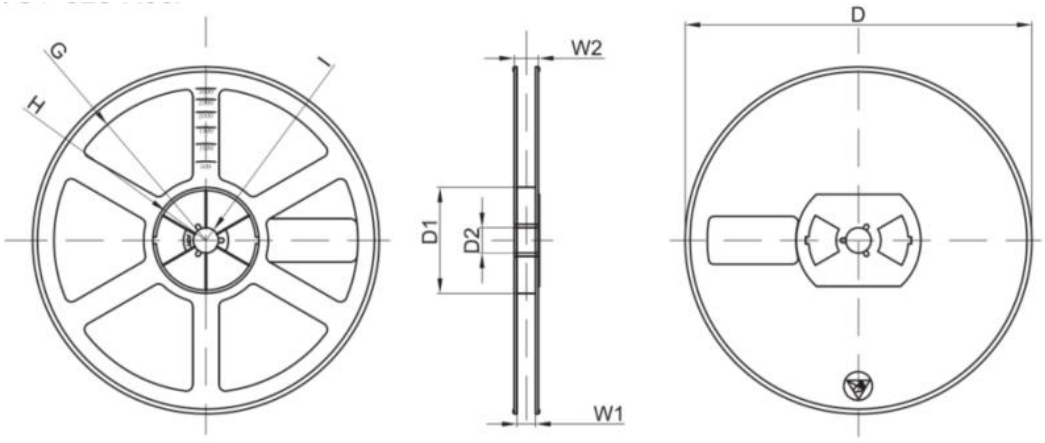


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-323	2.25	2.55	1.19	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

SOT-323 Tape Leader and Trailer



SOT-323 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	