

BSS138DW

50V Dual N-Channel MOSFET

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

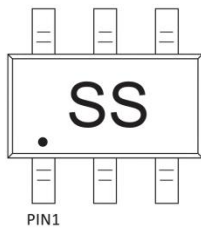
FEATURE

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

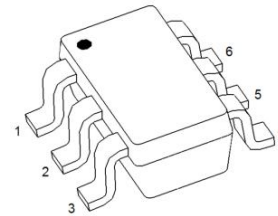
Application

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

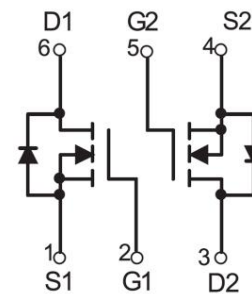
MARKING:



SOT-363



Schematic diagram



ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ 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	150	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

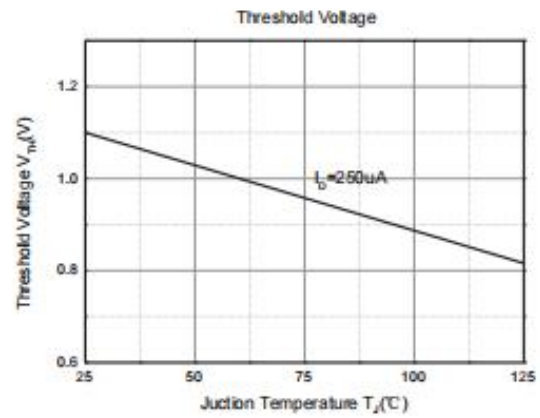
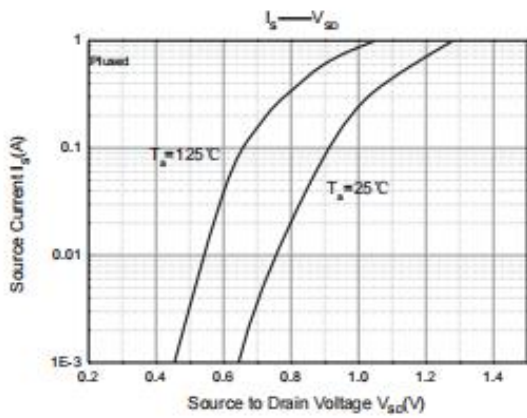
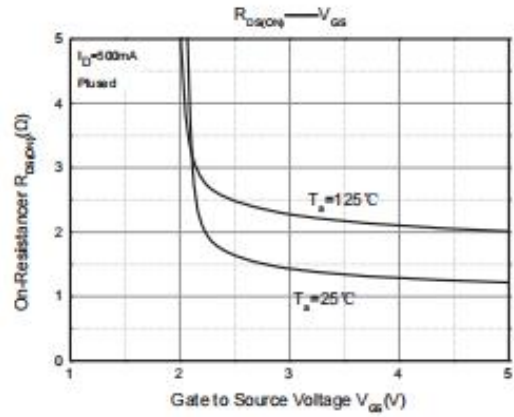
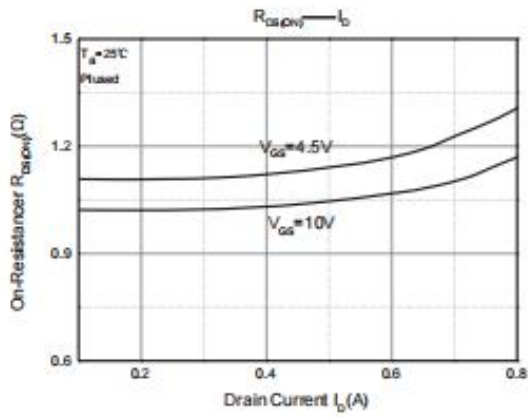
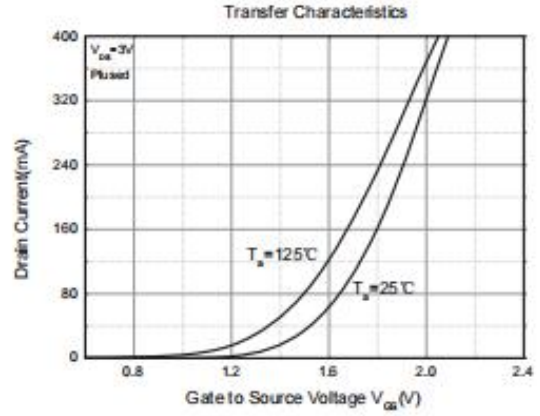
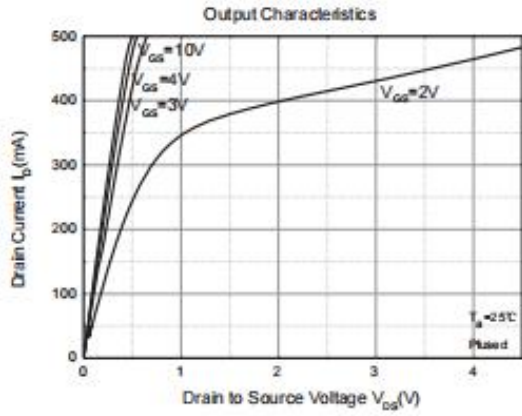
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

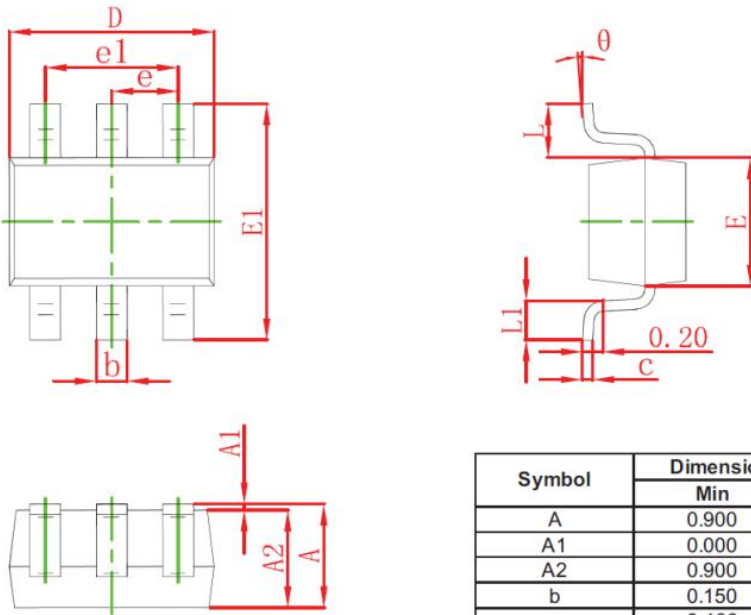
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	50			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 50V, V _{GS} = 0V			0.5	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage ¹	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 1mA	0.8	1.2	1.5	V
Drain-source on-resistance ¹	R _{DS(on)}	V _{GS} = 10V, I _D = 220mA		1.0	3.0	Ω
		V _{GS} = 4.5V, I _D = 220mA		1.1	5.0	
Forward tranconductance ¹	g _{FS}	V _{DS} = 10V, I _D = 220mA		0.15		S
DYNAMIC CHARACTERISTICS²						
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 _{DD} = 30V, I _D = 290mA, V _{GS} = 10V, 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 CHARACTERISTICS¹						
Diode Forward voltage	V _{DS}	I _S = 440mA, V _{GS} = 0V			1.4	V

Notes :

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

Typical Electrical and Thermal Characteristics

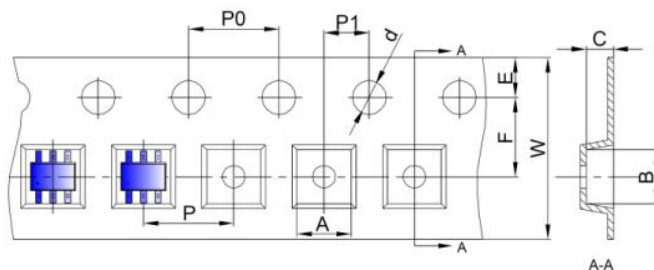




Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 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°

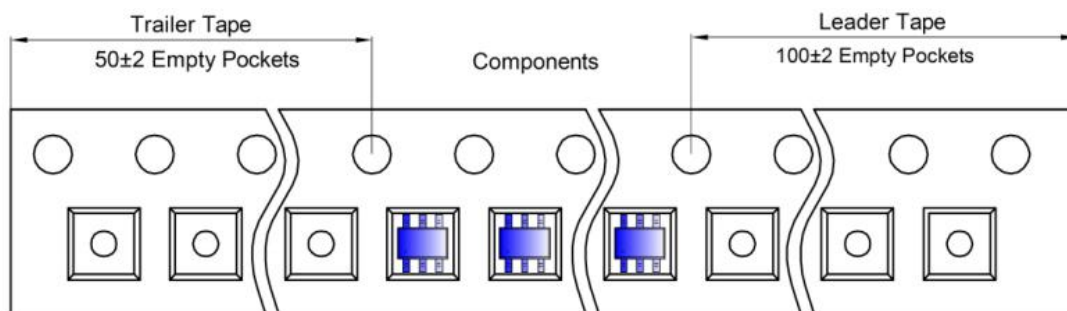
SOT-363 Tape and Reel

SOT-363 Embossed Carrier Tape

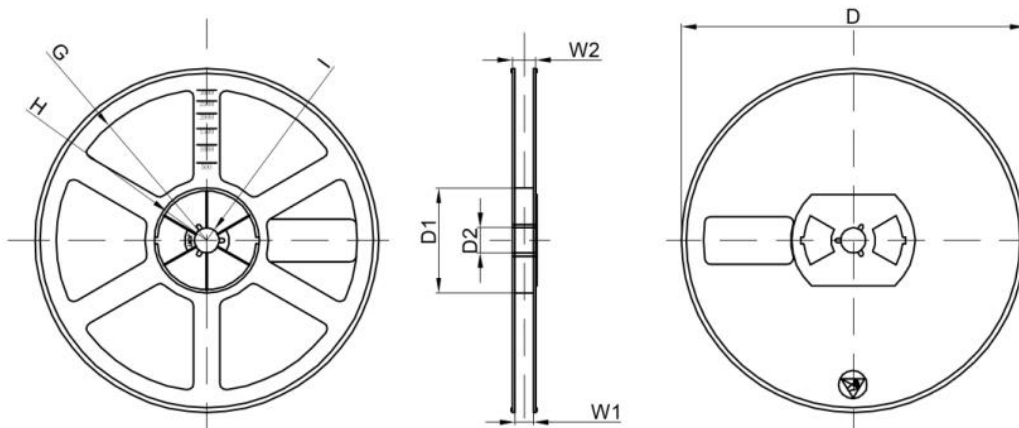


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-363	2.25	2.55	1.20	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-363 Tape Leader and Trailer



SOT-363 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	30,000 pcs	203×203×195	120,000 pcs	438×438×220	