BSS138KDWH

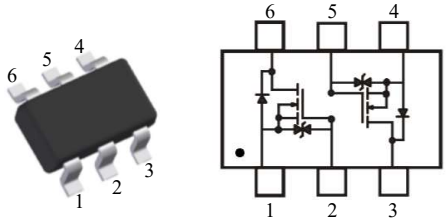
N-Channel Enhancement Mode Field Effect Transistor

FEATURES

· ESD protected up to 2kV

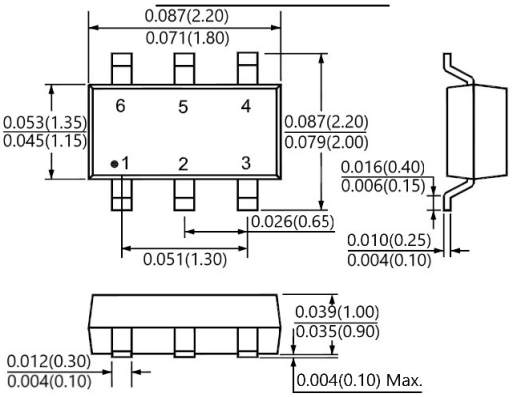
· Suffix "H" indicates Halogen-free parts, ex. BSS138KDWH

1.Source 2.Gate 3.Drain
4.Source 5.Gate 6.Drain



Top View

SOT-363



Dimensions in inch and (millimeter)

Maximum Ratings(T_A=25 ℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	50	V
Gate-Source Voltage	V_{GSS}	±20	V
Maximum Drain Current	I_D	360	mA
Peak Drain Current	I_{DM}	1.2	A
Power Dissipation	P_D	236	mW
Thermal Resistance, Junction-to-ambient(1)	$R_{\theta JA}$	530	℃/W
Operating and Storage Temperature Range	T_j ,T_{stg}	- 55 to + 150	℃

Note:

1.$R_{\theta JA}$ is the sum of the junction to case to case ambient thermal resistance where the case thrmal reference is defined as the sloder mounting surface of the drain pins. mounted on a 1 inch square pad of copper.

Electrical Characteristics(T_A=25 ℃ unless otherwise specified)

Parameter	Conditions	Symbol	Min.	Max.	Unit
Drain Source Breakdown Voltag	I_D = 250 μA	BV_{DSS}	50	-	V
Drain-Source Leakage Current	V_{DS} = 50 V	I_{DSS}	-	1	μA
Gate-Body Leakage Current	V_{GS} = ± 20 V	I_{GSS}	-	±10	μA
Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	$V_{GS(th)}$	0.8	1.5	V
Drain-Source On-State Resistance	V_{GS} = 10 V, I_D = 500 mA V_{GS} = 4.5 V, I_D = 200 mA V_{GS} = 2.5 V, I_D = 100 mA	$R_{DS(ON)}$	- - -	1.6 2.5 4.5	Ω
Input Capacitance	V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C_{iss}	-	50	pF
Output Capacitance		C_{oss}	-	20	
Reverse Transfer Capacitance		C_{rss}	-	5	
Turn-On Delay Time	V_{GS}=10V,V_{DD} = 25 V, R_G= 6 Ω, I_D = 500mA	$t_{d(on)}$	-	5	nS
Turn-On Rise Time		t_r	-	38	
Turn-Off Delay Time		$t_{d(off)}$	-	12	
Turn-Off Fall Time		t_f	-	50	
Drain-Source Diode Forward Voltage	V_{GS}=0V, I_S = 500mA	V_{SD}	-	1.5	V

RATINGS AND CHARACTERISTIC CURVES

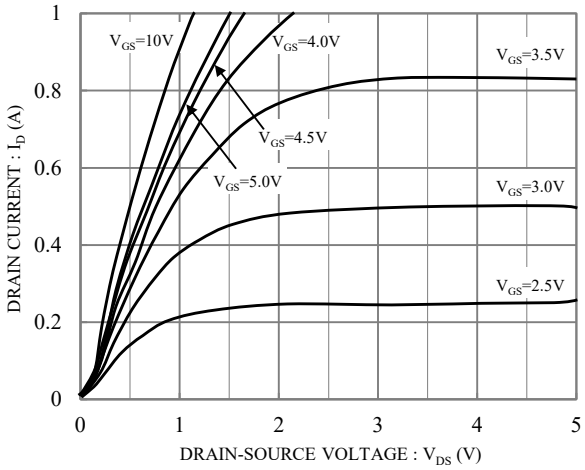


Fig.1 Typical output characteristics

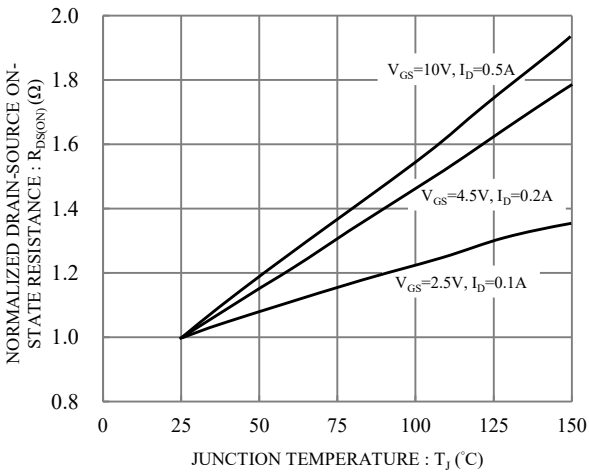


Fig.2 Drain-source on-state resistance vs. Junction temperature

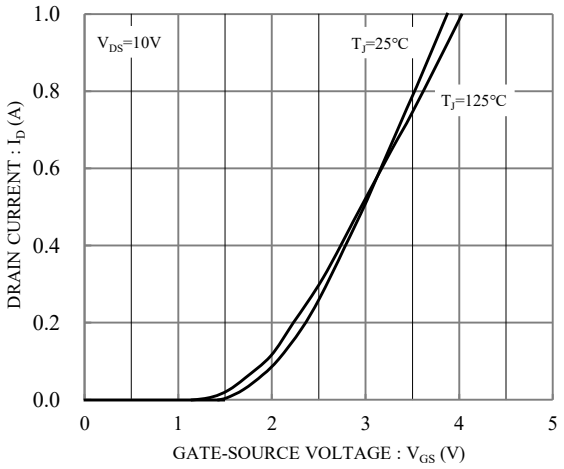


Fig.3 Drain current vs. Gate-source voltage

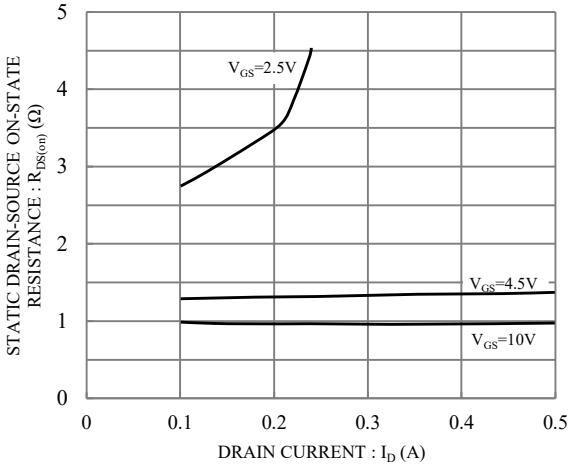


Fig.4 Static drain-source on-state resistance vs. Drain current

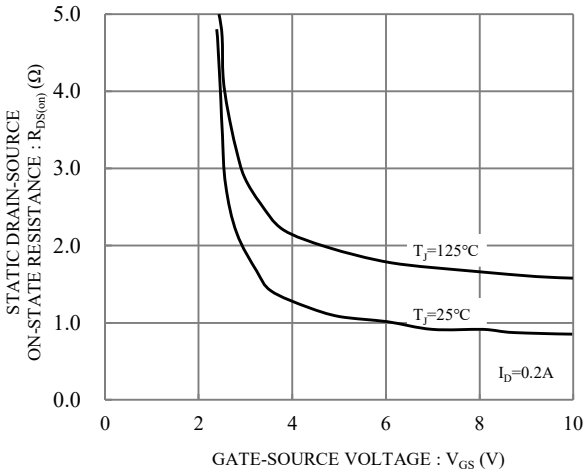


Fig.5 Static drain-source on-state resistance vs. Gate-source voltage

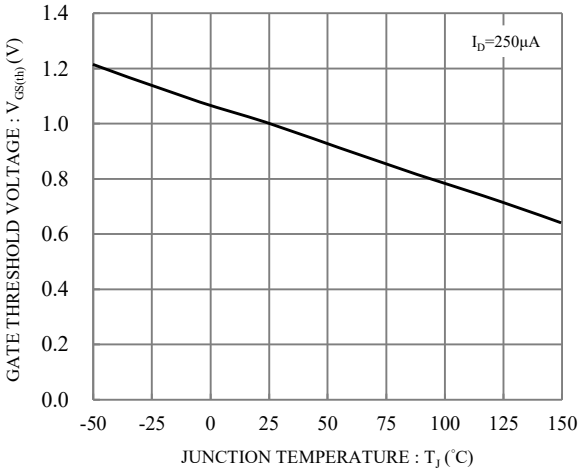
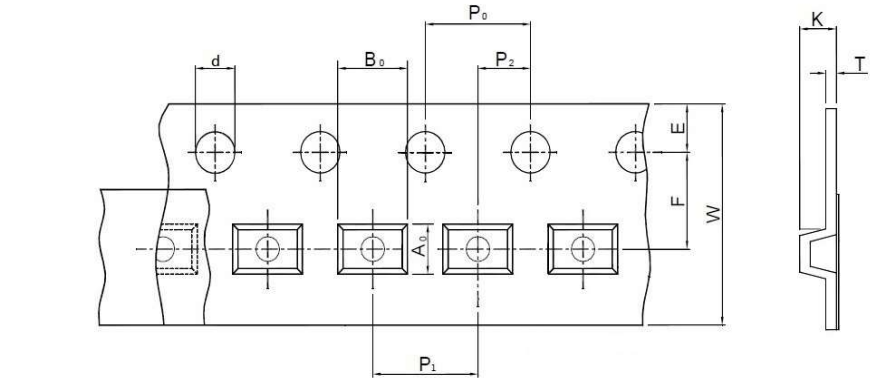
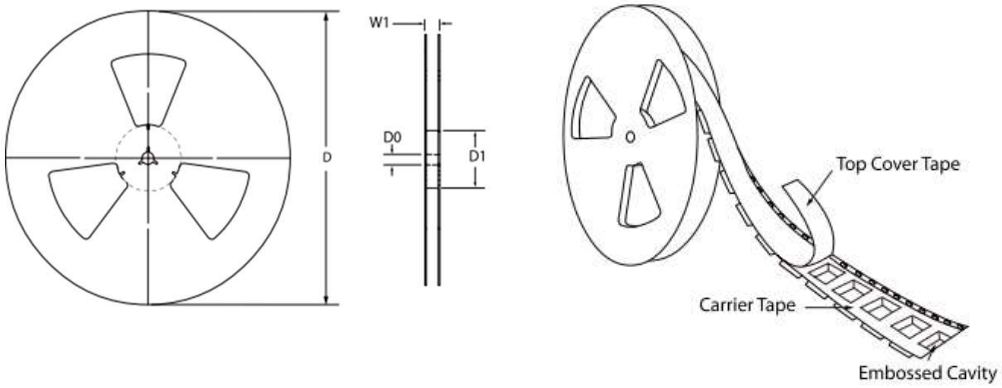


Fig.2 Gate threshold voltage vs. Junction temperature

TAPE & REEL SPECIFICATION





Item	Symbol	SOT-363
Carrier width	A_0	2.30 ± 0.10
Carrier length	B_0	2.30 ± 0.10
Carrier depth	K_0	1.20 ± 0.10
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178.00 ± 2.00
Feed hole width	D_0	13.00 ± 0.50
Reel inner diameter	D_1	MIN. 50.00
Sprocke hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.10
Sprocke hole pitch	P_0	4.00 ± 0.10
Punch hole pitch	P_1	4.00 ± 0.10
Embossment center	P_2	2.00 ± 0.10
Overall tape thickness	T	0.60 ± 0.10
Tape width	W	8.00 ± 0.30
Reel width	W1	MAX. 10.00

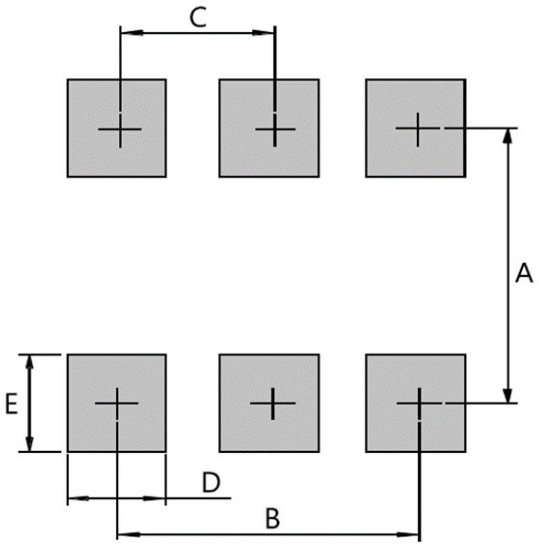
ORDER INFORMATION

Package	Reel Size	Quantity
SOT-363	7"	3,000

MARKING CODE

Part Number	Marking Code
BSS138KDWH	NL

SUGGESTED SOLDER PAD LAYOUT



Unit : mm

PACKAGE	A	B	C	D	E
SOT-363	1.90	1.30	0.65	0.42	0.60