

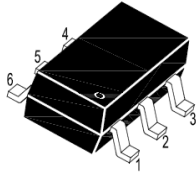


# BSS138DW

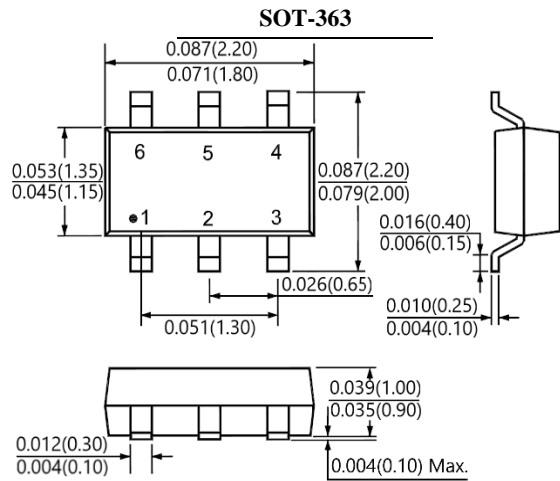
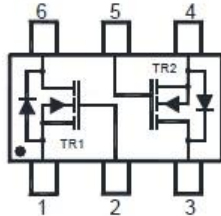
## N-Channel Enhancement Mode Field Effect Transistor

### FEATURES

- For low gate threshold voltage
- Suffix "H" indicates Halogen-free parts, ex. BSS138DWH



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



Dimensions in millimeter

### Maximum Ratings ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DSS}$	50	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Maximum Drain Current <sup>(NOTE 1)</sup>	$I_D$	200	mA
Total Power Dissipation <sup>(NOTE 1)</sup>	$P_{tot}$	200	mW
Operating and Storage Temperature Range	$T_j, T_{stg}$	- 55 to + 150	$^\circ\text{C}$

Note:

1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc.

### Electrical Characteristics ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)

Parameter	Conditions	Symbol	Min.	Max.	Unit
Drain Source Breakdown Voltage	$I_D = 250\text{ }\mu\text{A}$	$BV_{DSS}$	50	-	V
Drain-Source Leakage Current	$V_{DS} = 50\text{ V}$	$I_{DSS}$	-	0.5	$\mu\text{A}$
Gate-Body Leakage Current	$V_{GS} = \pm 20\text{ V}$	$I_{GSS}$	-	$\pm 100$	nA
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\text{ }\mu\text{A}$	$V_{GS(th)}$	0.5	1.5	V
Drain-Source On-State Resistance	$V_{GS} = 10\text{ V}, I_D = 220\text{ mA}$	$R_{DS(on)}$	-	3.5	$\Omega$
Forward Transconductance	$V_{DS} = 25\text{ V}, I_D = 0.2\text{ A}, f = 1\text{ MHz}$	$g_{FS}$	100	-	mS
Input Capacitance	$V_{GS} = 0\text{ V}, V_{DS} = 10\text{ V}, f = 1\text{ MHz}$	$C_{iss}$	-	50	pF
Output Capacitance		$C_{oss}$	-	25	
Reverse Transfer Capacitance		$C_{rss}$	-	8	
Turn-On Delay Time	$V_{DD} = 30\text{ V}, R_G = 50\text{ }\Omega, I_D = 0.2\text{ A}$	$t_{d(on)}$	-	20	ns
Turn-Off Delay Time		$t_{d(off)}$	-	20	



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### RATINGS AND CHARACTERISTIC CURVES

