

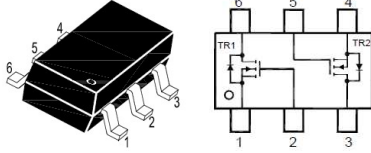


# MMBT7002DW

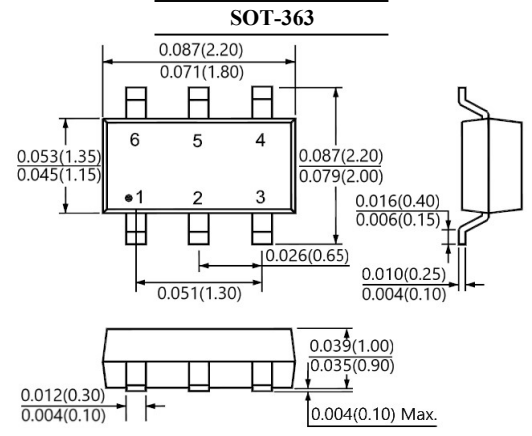
## N-Channel Enhancement Mode Field Effect Transistor

### FEATURES

- Low on resistance  $R_{DS(ON)}$
- Low gate threshold voltage
- Fast Switching Speed
- Suffix "H" indicates Halogen-free parts, ex. MMBT7002DWH



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



Dimensions in inch(millimeter)

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DSS}$	60	V
Drain Gate Voltage ( $R_{GS} \leq 1\text{ M}\Omega$ )	$V_{DGR}$	60	V
Gate-Source Voltage	$V_{GSS}$	Continuous	$\pm 20$
		Pulsed	$\pm 40$
Drain Current	$I_D$	Continuous	115
		Pulsed	800
Total Power Dissipation	$P_{tot}$	200	mW
Operating and Storage Temperature Range	$T_J, T_{stg}$	- 55 to + 150	$^\circ\text{C}$

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

Parameter	Conditions	Symbol	Min.	Max.	Unit
Drain Source Breakdown Voltage	$I_D = 10\mu\text{A}$	$BV_{DSS}$	60	-	V
Zero Gate Voltage Drain Current	$V_{DS} = 60\text{V}$	$I_{DSS}$	-	1	$\mu\text{A}$
Gate Source Leakage Current	$V_{GS} = \pm 20\text{V}$	$I_{GSS}$	-	$\pm 0.1$	$\mu\text{A}$
Gate Threshold Voltage	$V_{DS} = V_{GS} = 10\text{V}, I_D = 250\mu\text{A}$	$V_{GS(th)}$	1	2.5	V
Static Drain Source On-Resistance	$V_{GS} = 5\text{V}, I_D = 50\text{mA}$	$R_{DS(ON)}$	-	7.5	$\Omega$
	$V_{GS} = 10\text{V}, I_D = 500\text{mA}$		-	7.5	
Drain Source On Voltage	$V_{GS} = 5\text{V}, I_D = 50\text{mA}$	$V_{DS(ON)}$	-	1.5	V
	$V_{GS} = 10\text{V}, I_D = 500\text{mA}$		-	3.75	
Forward Transconductance	$V_{DS} = 10\text{V}, I_D = 200\text{mA}$	$g_{FS}$	80	-	mS
Input Capacitance	$V_{DS} = 25\text{V}, f = 1\text{MHz}$	$C_{iss}$	-	50	pF
Output Capacitance		$C_{oss}$	-	25	pF
Reverse Transfer Capacitance		$C_{rss}$	-	5	pF
Turn On Time	$V_{DD} = 30\text{V}, R_L = 150\Omega, I_D = 0.2\text{A},$	$t_{on}$	-	20	ns
Turn Off Time	$V_{GS} = 10\text{V}, R_{GEN} = 25\Omega$	$t_{off}$	-	20	ns



### RATINGS AND CHARACTERISTIC CURVES

