

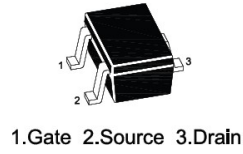
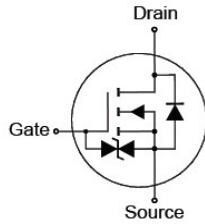


MMBT7002FKW

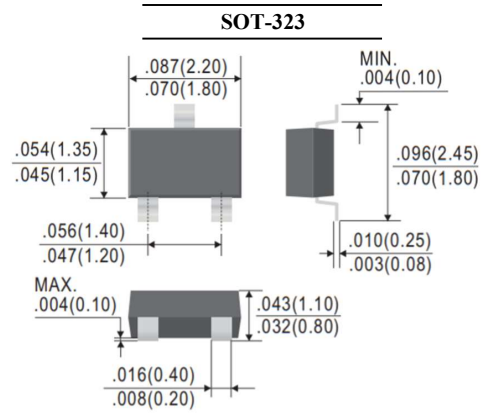
N-Channel Enhancement Mode Field Effect Transistor

FEATURES

- $R_{DS(ON)} \leq 3\Omega @ V_{GS}=10V$
- ESD Protection HBM >2KV
- Suffix "H" indicates Halogen-free parts, ex. MMBT7002FKWH



1.Gate 2.Source 3.Drain



Dimensions in inch and (millimeter)

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current (Continuous)	I_D	0.27 0.21	A
		$T_A=25^\circ\text{C}$ $T_A=70^\circ\text{C}$	
Pulse Drain Current	I_{DM}	1.07	A
Maximum Power Dissipation	P_{tot}	0.34 0.22	W
Thermal Resistance-Junction to Ambient (Note 1)	$R_{\theta ja}$	367	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	$^\circ\text{C}$

Note :

1.The device mounted on 1in² FR4 board with 2 oz copper



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

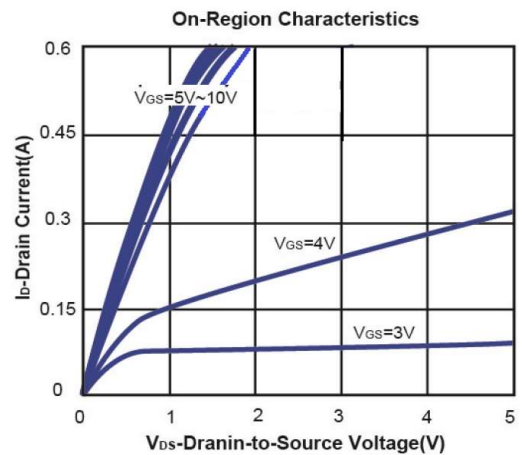
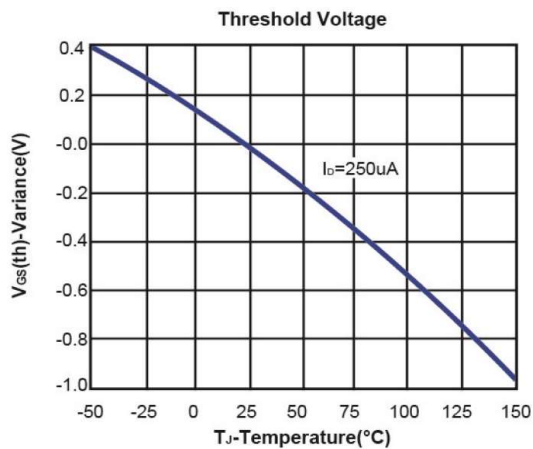
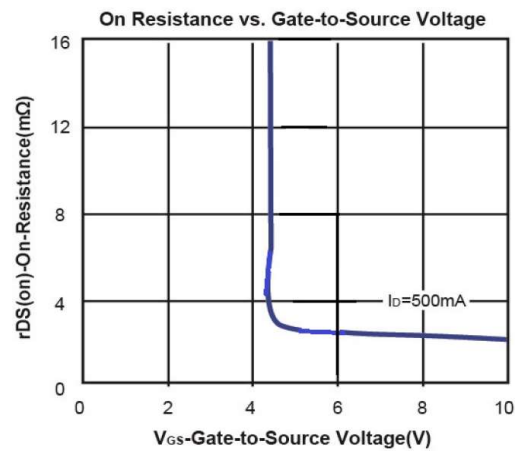
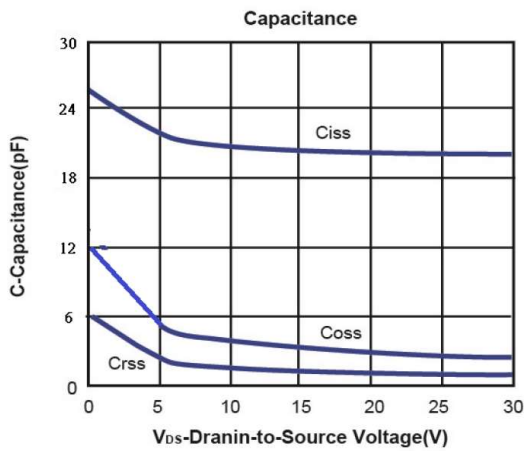
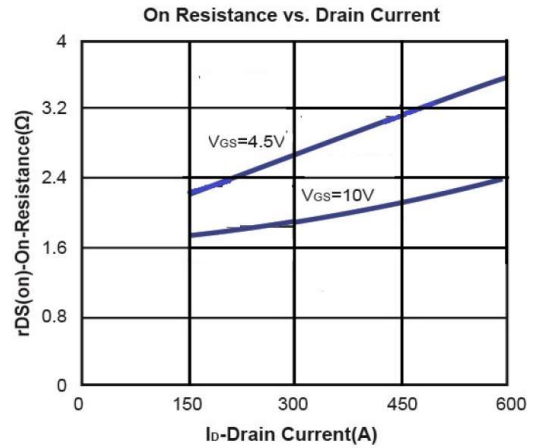
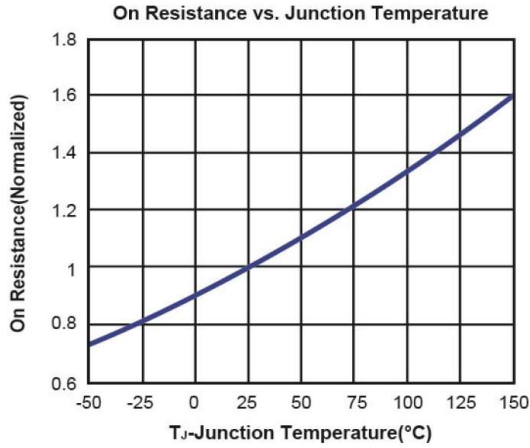
Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Static						
Drain Source Breakdown Voltage	$V_{GS}=0, I_D=10\mu\text{A}$	BV_{DSS}	60	-	-	V
Zero Gate Voltage Drain Current	$V_{DS}=60\text{V}, V_{GS}=0\text{V}$	I_{DSS}	-	-	1	μA
Gate Source Leakage Current	$V_{GS}=\pm 20\text{V}$	I_{GSS}	-	-	± 10	μA
Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	$V_{GS(th)}$	1.3	-	2.1	V
Static Drain Source On-Resistance	$V_{GS}=10\text{V}, I_D=500\text{mA}$	$R_{DS(ON)}$	-	-	3	Ω
	$V_{GS}=4.5\text{V}, I_D=200\text{mA}$		-	-	4	
Dynamic						
Total Gate Charge	$V_{DS}=30\text{V}, V_{GS}=10\text{V}, I_D=200\text{A}$	Q_g	-	3.7	-	nC
			-	1.4	-	
Gate-Source Charge	$V_{DS}=30\text{V}, V_{GS}=4.5\text{V}, I_D=200\text{mA}$	Q_{gs}	-	2.2	-	
Gate-Drain Charge		Q_{gd}	-	0.2	-	
Input Capacitance	$V_{DS}=25\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$	C_{iss}	-	21.0	-	pF
Output Capacitance		C_{oss}	-	3.0	-	
Reverse Transfer Capacitance		C_{rss}	-	1.0	-	
Turn-On Delay Time		$t_{d(on)}$	-	3.5	-	
Rise Time	$V_{DS}=30\text{V}, I_D=200\text{mA}, V_{GS}=10\text{V}, R_{GS}=10\Omega, R_L=150\Omega$	t_r	-	20.3	-	ns
Turn-Off Delay Time		$t_{d(off)}$	-	4.4	-	
Fall Time		t_f	-	22.2	-	
Drain-Source Body Diode						
Diode Forward Voltage	$V_{GS}=0\text{V}, I_S=200\text{mA}$	V_{SD}	-	-	1.2	V



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RATINGS AND CHARACTERISTIC CURVES





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