

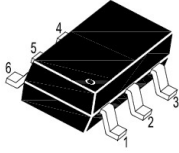


MMBT7002KDW

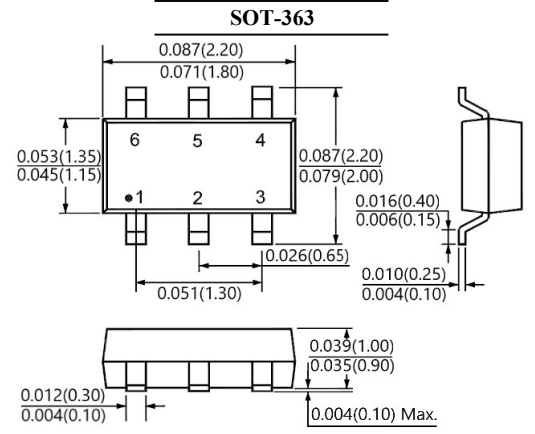
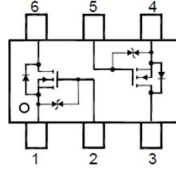
N-Channel Enhancement Mode Field Effect Transistor

FEATURES

- Low on resistance $R_{DS(ON)}$
- Low gate threshold voltage
- ESD protected up to 2KV
- Suffix "H" indicates Halogen-free parts, ex. MMBT7002KDWH



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



Dimensions in inch(millimeter)

Maximum Ratings($T_A=25\text{ }^\circ\text{C}$ 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	300	mA
Drain Current (Pulse Width $\leq 10\text{ }\mu\text{s}$)	I_{DM}	1.2	A
Total Power Dissipation	P_{tot}	290 ⁽¹⁾ 350 ⁽²⁾	mW
Operating and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	$^\circ\text{C}$

Note:

1. Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
2. Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for drain 1 cm^2 .

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

Parameter	Conditions	Symbol	Min.	Max.	Unit
Drain Source Breakdown Voltag	$I_D=10\mu\text{A}$	BV_{DSS}	60	-	V
Zero Gate Voltage Drain Current	$V_{DS}=60\text{V}$	I_{DSS}	-	1	μA
Gate Source Leakage Current	$V_{GS}=\pm 20\text{V}$	I_{GSS}	-	± 10	μA
Gate Threshold Voltage	$V_{DS}=V_{GS}=10\text{V}, I_D=250\mu\text{A}$	$V_{GS(th)}$	1.1	2.1	V
Static Drain Source On-Resistance	$V_{GS}=5\text{V}, I_D=50\text{mA}$	$R_{DS(ON)}$	-	3	Ω
	$V_{GS}=10\text{V}, I_D=500\text{mA}$		-	4	
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



MMBT7002KDW

N-Channel Enhancement Mode Field Effect Transistor

RATINGS AND CHARACTERISTIC CURVES

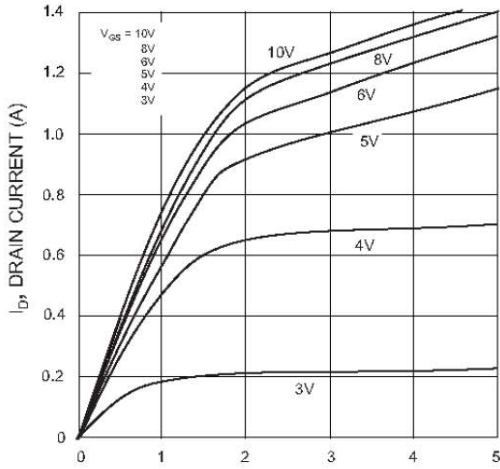


Fig. 1 Typical Output Characteristics

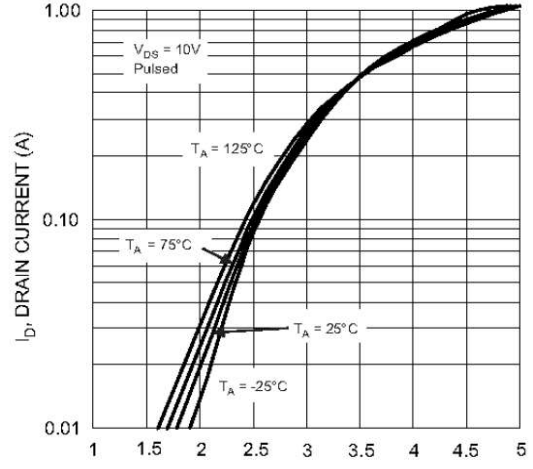


Fig. 2 Typical Transfer Characteristics

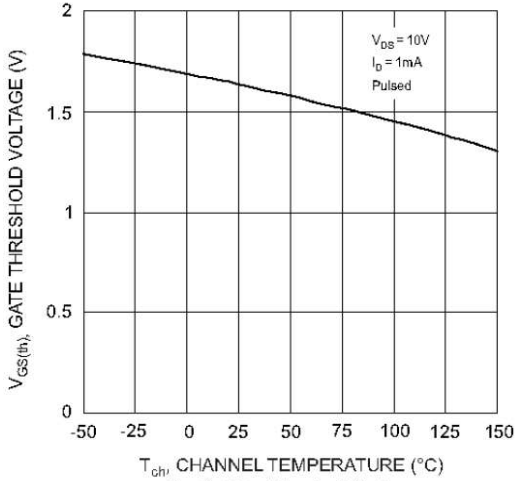


Fig. 3 Gate Threshold Voltage vs. Channel Temperature

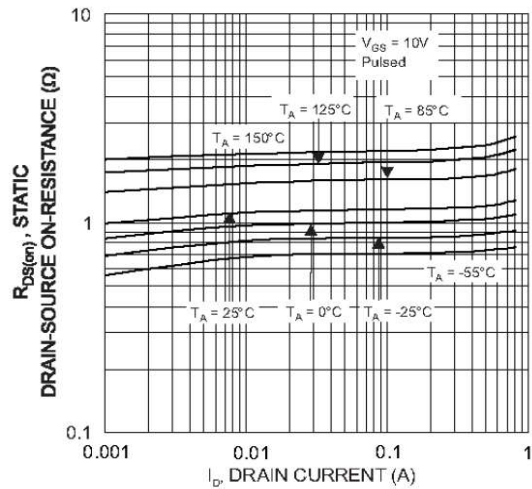


Fig. 4 Static Drain-Source On-Resistance vs. Drain Current

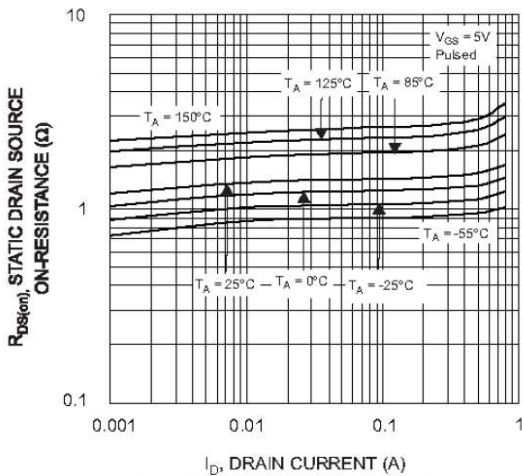


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

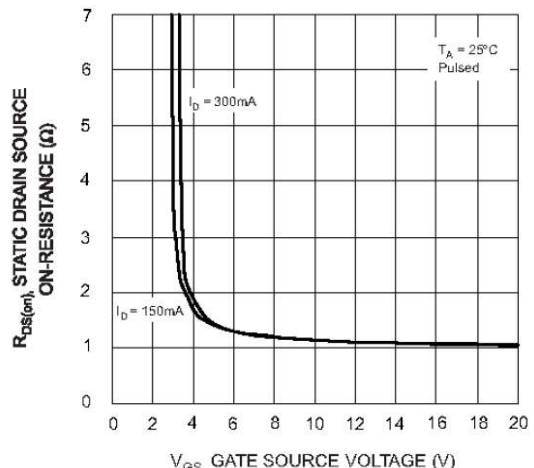


Fig. 6 Static Drain-Source On-Resistance vs. Gate-Source Voltage