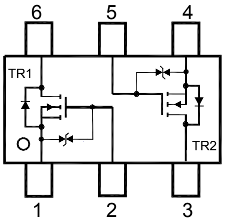
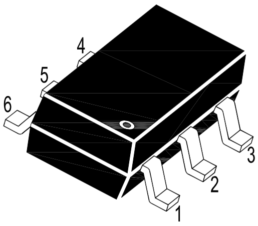
MMBT7002KDW-AH

N-Channel Enhancement Mode Field Effect Transistor

Features

- Low on resistance $R_{DS(ON)}$
- Low gate threshold voltage
- Low input capacitance
- ESD protected up to 2KV
- AEC-Q101 Qualified and PPAP Capable
- Halogen and Antimony Free(HAF), RoHS compliant





1.Source 2. Gate 3. Drain
4. Source 5.Gate 6. Drain
SOT-363 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

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 ≤ 10 µs)	I_{DM}	1.2	A
Total Power Dissipation	P_{tot}	295 [1] 350 [2]	mW
Junction and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	°C

[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.

Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Max.	Unit
Drain Source Breakdown Voltage at I_D = 10 µA	BV_{DSS}	60	-	V
Zero Gate Voltage Drain Current at V_{DS} = 60 V	I_{DSS}	-	1	µA
Gate Source Leakage Current at V_{GS} = ± 20 V	I_{GSS}	-	± 10	µA
Gate Threshold Voltage at V_{DS} = 10 V, I_D = 250 µA	$V_{GS(th)}$	1.1	2.1	V
Static Drain Source On-Resistance at V_{GS} = 10 V, I_D = 500 mA at V_{GS} = 5 V, I_D = 50 mA	$R_{DS(ON)}$	- -	3 4	Ω
Forward Transconductance at V_{DS} = 10 V, I_D = 200 mA	g_{fs}	80	-	mS
Input Capacitance at V_{DS} = 25 V, f = 1 MHz	C_{iss}	-	50	pF
Output Capacitance at V_{DS} = 25 V, f = 1 MHz	C_{oss}	-	25	pF
Reverse Transfer Capacitance at V_{DS} = 25 V, f = 1 MHz	C_{rss}	-	5	pF

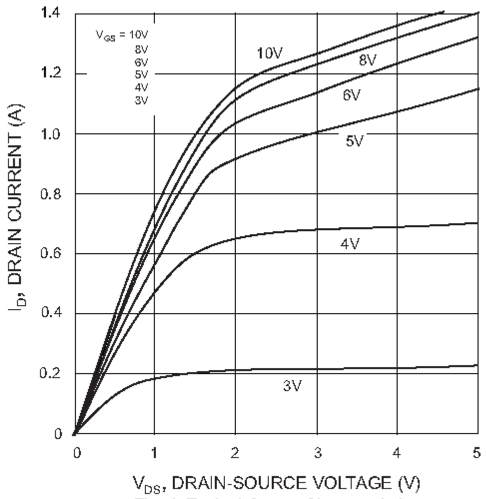


Fig. 1 Typical Output Characteristics

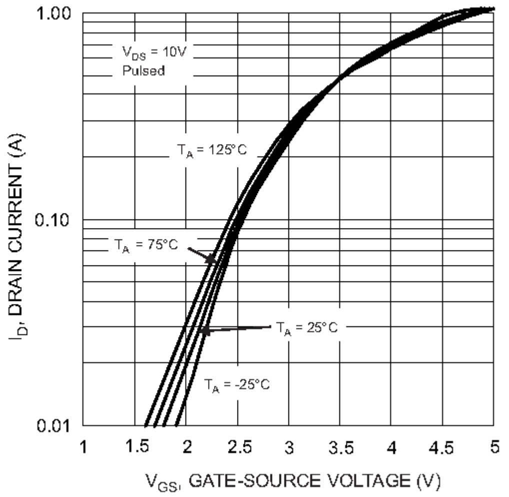


Fig. 2 Typical Transfer Characteristics

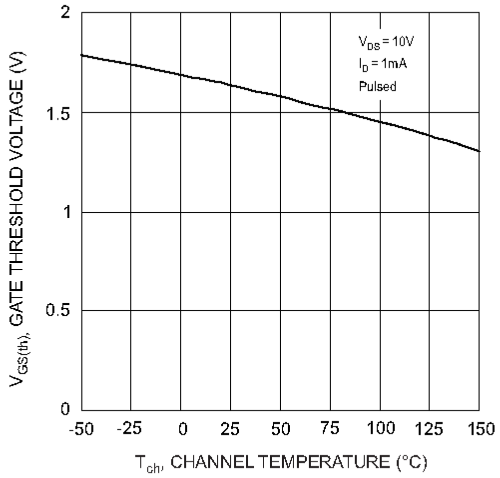


Fig. 3 Gate Threshold Voltage
vs. Channel Temperature

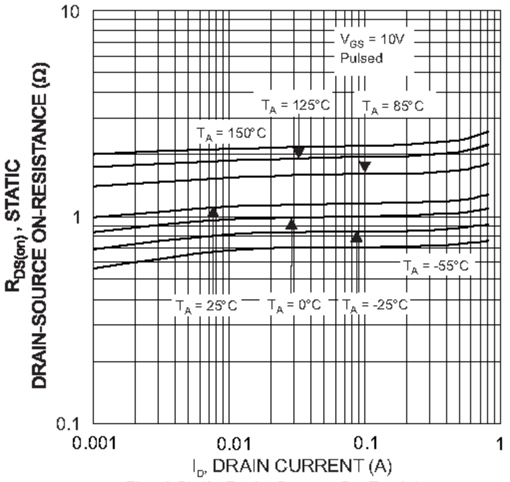


Fig. 4 Static Drain-Source On-Resistance
Vs. Drain Current

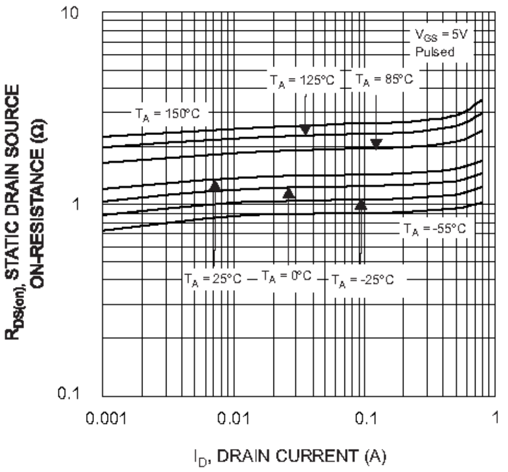


Fig. 5 Static Drain-Source On-Resistance
vs. Drain Current

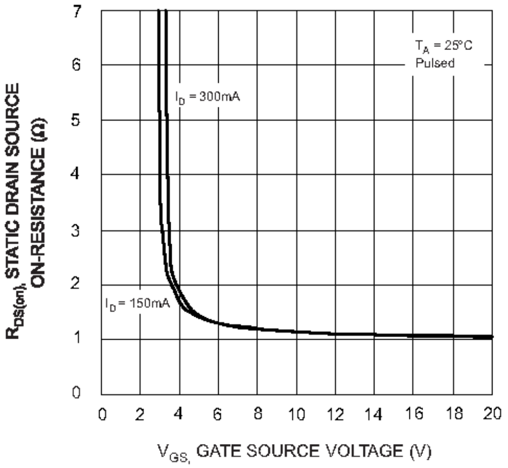


Fig. 6 Static Drain-Source On-Resistance
vs. Gate-Source Voltage

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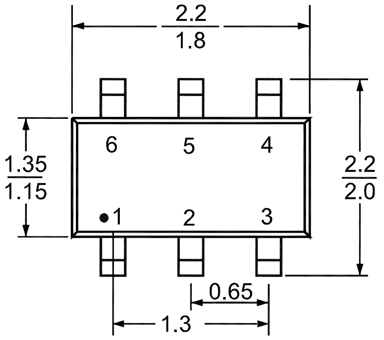
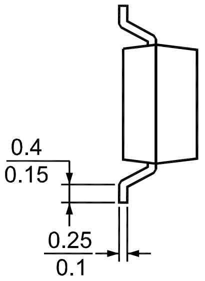
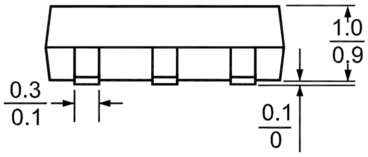
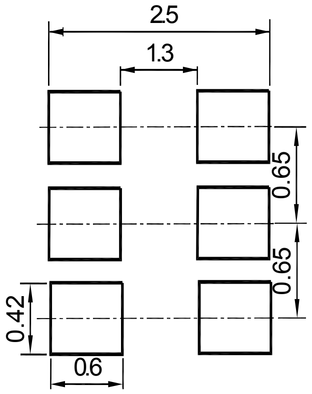
Package Outline Dimensions (Units: mm) SOT-363







Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-363	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000