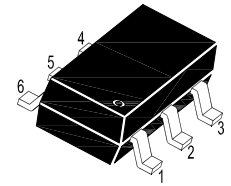
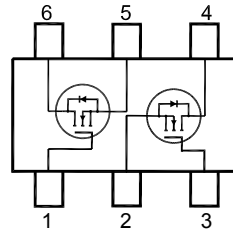


MMBT7002D

N-Channel Enhancement Mode Field Effect Transistor

Features

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switching
- High saturation current capability
- High speed switching



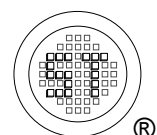
1. Gate 2. Source 3. Gate
4. Drain 5. Source 6. Drain
SOT-26 Plastic Package

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

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}	± 20	V
-Non Repetitive ($t_p < 50 \mu\text{s}$)		± 40	
Maximum Drain Current	I_D	115	mA
-Pulsed		800	
Total Power Dissipation	P_{tot}	200	mW
Operating and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	$^\circ\text{C}$

Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
Drain Source Breakdown Voltage at $I_D = 10 \mu\text{A}$	BV_{DSS}	60	-	V
Zero Gate Voltage Drain Current at $V_{DS} = 60 \text{ V}$	I_{DSS}	-	1	μA
Gate-Body Leakage Current at $V_{GS} = \pm 20 \text{ V}$	I_{GSS}	-	± 100	nA
Gate Threshold Voltage at $V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	$V_{GS(th)}$	1	2.5	V
On-State Drain Current at $V_{GS} = 10 \text{ V}, V_{DS} = 7.5 \text{ V}$	$I_{D(ON)}$	500	-	mA
Drain-Source On-Voltage at $V_{GS} = 10 \text{ V}, I_D = 500 \text{ mA}$ at $V_{GS} = 5 \text{ V}, I_D = 50 \text{ mA}$	$V_{DS(ON)}$	-	3.75	V
		-	1.5	V
Static Drain-Source On-Resistance at $V_{GS} = 10 \text{ V}, I_D = 500 \text{ mA}$	$R_{DS(ON)}$	-	7.5	Ω
Forward Transconductance at $V_{DS} = 10 \text{ V}, I_D = 200 \text{ mA}$	g_{FS}	80	-	mS
Input Capacitance at $V_{DS} = 25 \text{ V}, f = 1 \text{ MHz}$	C_{iss}	-	50	pF
Output Capacitance at $V_{DS} = 25 \text{ V}, f = 1 \text{ MHz}$	C_{oss}	-	25	pF
Reverse Transfer Capacitance at $V_{DS} = 25 \text{ V}, f = 1 \text{ MHz}$	C_{rss}	-	5	pF
Turn-On Time at $V_{DD} = 30 \text{ V}, R_L = 150 \Omega, I_D = 0.2 \text{ A}, V_{GS} = 10\text{V}, R_{GEN} = 25\Omega$	t_{on}	-	20	ns
Turn-Off Time at $V_{DD} = 30 \text{ V}, R_L = 150 \Omega, I_D = 0.2 \text{ A}, V_{GS} = 10\text{V}, R_{GEN} = 25\Omega$	t_{off}	-	20	ns



MMBT7002D

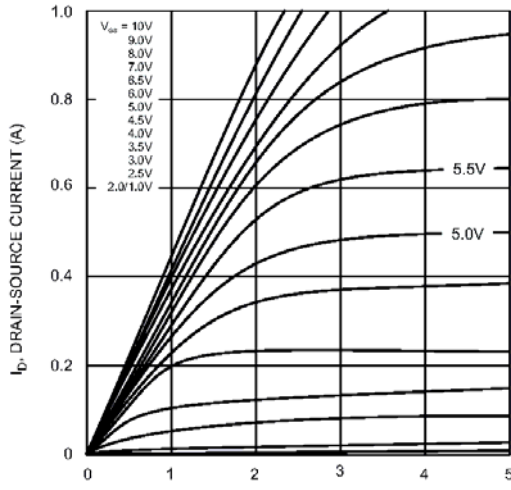


Fig. 1 On-Region Characteristics

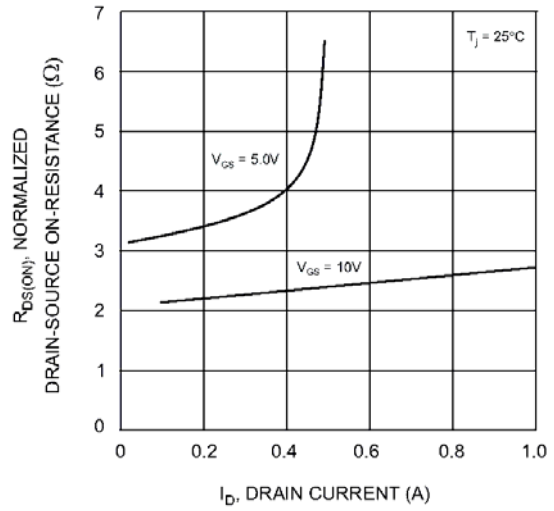


Fig. 2 On-Resistance vs Drain Current

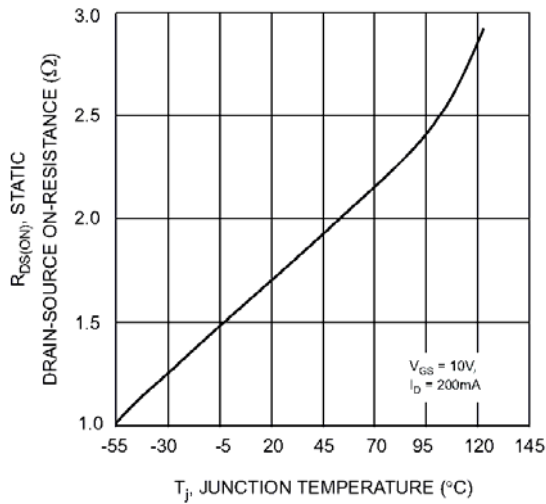


Fig. 3 On-Resistance vs Junction Temperature

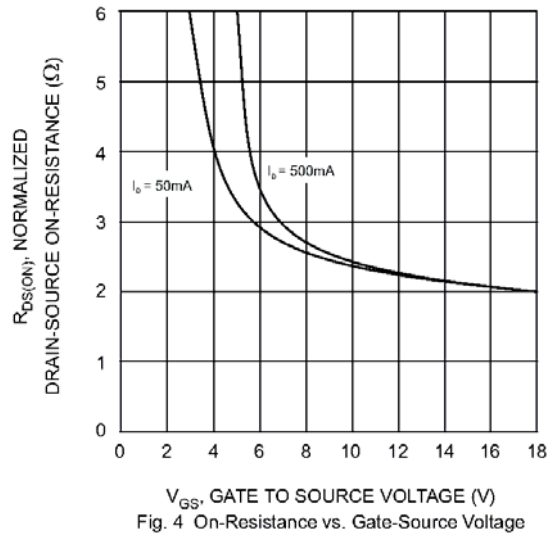
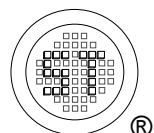


Fig. 4 On-Resistance vs. Gate-Source Voltage



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