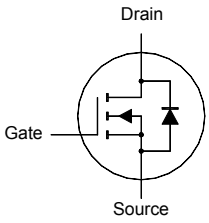
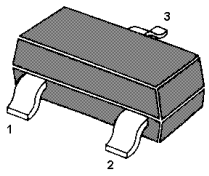
MMBT7002A

N-Channel Enhancement Mode Field Effect Transistor





1.Gate 2.Source 3.Drain
SOT-23 Plastic Package

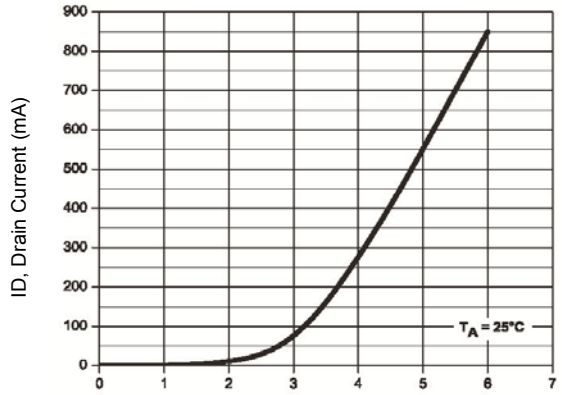
Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain-Gate Voltage	V_{DG}	60	V
Gate-Source Voltage	V_{GS}	40	V
Drain Curren	I_D	280	mA
Source-drain current	I_S	280	mA
Peak Drain Current	I_{DM}	1.5	A
Source-drain current (pulsed)	I_{SM}	1.5	A
Power Dissipation	P_D	350	mW
Thermal Resistance - Junction to Ambient	$R_{\theta JA}$	357	°C/W
Operating and Storage Temperature Range	T_J, T_{stg}	- 65 to + 150	°C

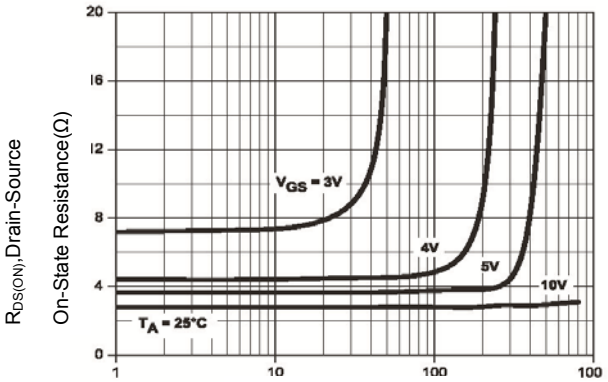
Characteristics at T_a = 25 °C

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
Zero Gate Voltage Drain Current at V_{DS} = 60 V, T_J = 125 °C	I_{DSS}	-	500	µA
Gate Threshold Voltage at V_{DS} = V_{GS}, I_D = 250 µA	$V_{GS(th)}$	-	2.5	V
On-State Drain Current at V_{GS} = 10 V, V_{DS} = 10 V	$I_{D(ON)}$	500	-	mA
Drain-Source Diode Forward Voltage at V_{GS} = 0, I_S = 400 mA	V_{SD}	-	1.2	V
Drain-Source On-Voltage at V_{GS} = 10 V, I_D = 500 mA at V_{GS} = 5 V, I_D = 50 mA	$V_{DS(ON)}$	- -	1 0.15	V V
Static Drain-Source On-Resistance at V_{GS} = 10 V, I_D = 500 mA	$R_{DS(ON)}$	-	2	Ω
Static Drain-Source On-Resistance at V_{GS} = 10 V, I_D = 500 mA, T_J = 125 ℃	$R_{DS(ON)}$	-	3.5	Ω
Static Drain-Source On-Resistance at V_{GS} = 5 V, I_D = 50 mA	$R_{DS(ON)}$	-	3	Ω
Static Drain-Source On-Resistance at V_{GS} = 5 V, I_D = 50 mA, T_J = 125 ℃	$R_{DS(ON)}$	-	5	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
Turn-On Time at V_{DD} = 30 V,R_G= 25 Ω, I_D = 200 mA, V_{GS} = 10V,R_L = 150Ω	t_{on}	-	20	ns
Turn-Off Time at V_{DD} = 30 V,R_G= 25 Ω, I_D = 200 mA, V_{GS} = 10V,R_L = 150Ω	t_{off}	-	20	ns

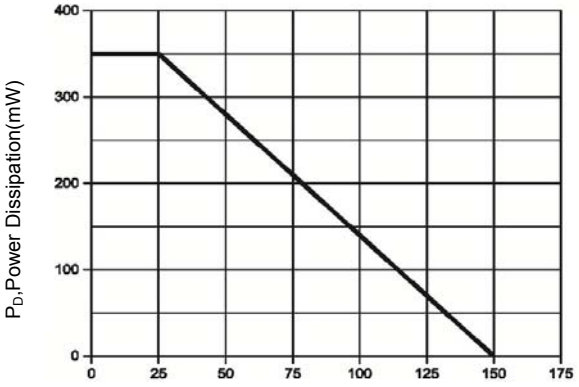
Transfer Characteristics



Drain Source On Resistance



Power Derating



Output Characteristics