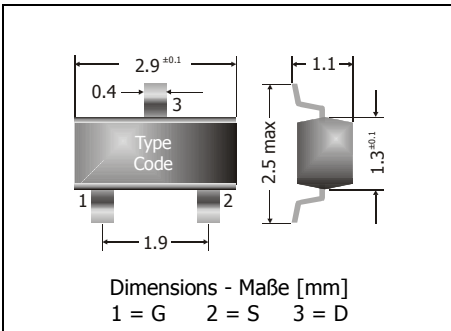


**MMBT7002K**

**N**      **N-Channel Enhancement Mode FET with protected Gate**      **N**  
**N-Kanal FET mit Gateschutzdiode – Anreicherungstyp**

Version 2011-02-01



Power dissipation – Verlustleistung	350 mW
Plastic case Kunststoffgehäuse	SOT-23 (TO-236)
Weight approx. – Gewicht ca.	0.01 g
Plastic material has UL classification 94V-0 Gehäusematerial UL94V-0 klassifiziert	
Standard packaging taped and reeled Standard Lieferform getupet auf Rolle	



**Maximum ratings (T<sub>A</sub> = 25°C)**

**Grenzwerte (T<sub>A</sub> = 25°C)**

		<b>MMBT7002K</b>	
Drain-Source-voltage – Drain-Source-Spannung		V <sub>DSS</sub>	60 V
Gate-Source-voltage – Gate-Source-Spannung	dc	V <sub>GSS</sub>	± 20 V
	ESD	V <sub>GSS</sub>	± 2 kV
Power dissipation – Verlustleistung		P <sub>tot</sub>	350 mW
Drain current continuous – Drainstrom (dc)		I <sub>D</sub>	115 mA
Drain current pulsed – Drainstrom gepulst	t <sub>p</sub> < 10 μs	I <sub>DM</sub>	800 mA
Operating Junction temperature – Sperrschichttemperatur		T <sub>j</sub>	150°C
Storage temperature – Lagerungstemperatur		T <sub>s</sub>	-55...+150°C

**Characteristics (T<sub>j</sub> = 25°C)**
**Kennwerte (T<sub>j</sub> = 25°C)**

		<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>
Drain-Source breakdown voltage – Drain-Source-Durchbruchspannung I <sub>D</sub> = 10 μA	BV <sub>DSS</sub>	60 V		
Drain-Source leakage current – Drain-Source Leckstrom V <sub>DS</sub> = 60 V	G short I <sub>DSS</sub>		1 μA	
Gate-Source leakage current – Gate-Source Leckstrom V <sub>GS</sub> = 20 V	±I <sub>GSS</sub>		10 μA	
Gate-Threshold voltage – Gate-Source Schwellspannung V <sub>GS</sub> = V <sub>DS</sub> , I <sub>D</sub> = 250 μA	V <sub>GS(th)</sub>	1 V	2.5 V	
Drain-Source on-voltage – Drain-Source-Spannung V <sub>GS</sub> = 10 V, I <sub>D</sub> = 500 mA V <sub>GS</sub> = 5 V, I <sub>D</sub> = 50 mA	V <sub>DS(on)</sub>		3.75 V 1.5 V	
Drain-Source on-state resistance – Drain-Source Einschaltwiderstand V <sub>GS</sub> = 10 V, I <sub>D</sub> = 500 mA V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 200 mA	R <sub>DS(on)</sub> R <sub>DS(on)</sub>			3 Ω 4 Ω
Forward Transconductance – Übertragungssteilheit V <sub>DS</sub> ≥ 10 V <sub>DS(on)</sub> , I <sub>D</sub> = 200 mA	g <sub>FS</sub>	80 mS		
Input Capacitance – Eingangskapazität V <sub>DS</sub> = 25 V, f = 1 MHz	C <sub>iss</sub>		50 pF	
Output Capacitance – Ausgangskapazität V <sub>DS</sub> = 25 V, f = 1 MHz	C <sub>oss</sub>		25 pF	
Reverse Transfer Capacitance – Rückwirkungskapazität V <sub>DS</sub> = 25 V, f = 1 MHz	C <sub>rss</sub>		5 pF	
Turn-On Time – Einschaltzeit V <sub>DD</sub> = 30 V, R <sub>L</sub> = 150 Ω, I <sub>D</sub> = 0.2 A, V <sub>GS</sub> = 10 V, R <sub>G</sub> = 25 Ω	t <sub>on</sub>		20 ns	
Turn-Off Delay Time – Ausschaltverzögerung V <sub>DD</sub> = 30 V, R <sub>L</sub> = 150 Ω, I <sub>D</sub> = 0.2 A, V <sub>GS</sub> = 10 V, R <sub>G</sub> = 25 Ω	t <sub>off</sub>		20 ns	