

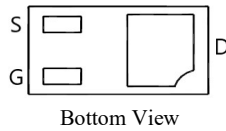


MMBT7002KLP

N-Channel Enhancement Mode Field Effect Transistor

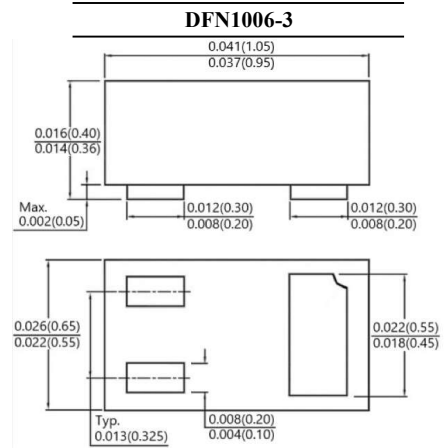
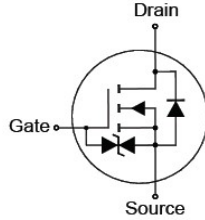
FEATURES

- Low on resistance $R_{DS(ON)}$
- Low gate threshold voltage
- Low input capacitance
- Suffix "H" indicates Halogen-free parts, ex. MMBT7002KLPH



Bottom View

D	Drain
G	Gate
S	Source



Dimensions in inch and (millimeter)

Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current (Note 1)	I_D	$V_{GS}=10\text{V}$	450
		$V_{GS}=10\text{V}, T_A=100^\circ\text{C}$	220
Peak Drain Current, pulsed ($t_p \leq 10\mu\text{s}$)	I_{DM}	1.8	A
Total Power Dissipation	P_{tot}	(Note 1)	360
		(Note 2)	715
Operating and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	$^\circ\text{C}$

Note :

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

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

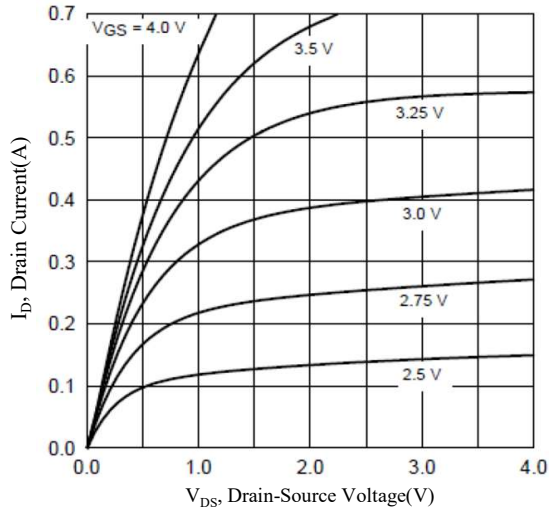
Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Drain Source Breakdown Voltag	$I_D=10\mu\text{A}$	BV_{DSS}	60	-	-	V
Zero Gate Voltage Drain Current	$V_{DS}=60\text{V}$	I_{DSS}	-	-	1	μA
Gate Source Leakage Current	$V_{GS}=\pm 20\text{V}$	I_{GSS}	-	-	± 10	μA
Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	$V_{GS(th)}$	1.1	-	2.1	V
Static Drain Source On-Resistance	$V_{GS}=10\text{V}, I_D=450\text{mA}$ $V_{GS}=5\text{V}, I_D=50\text{mA}$	$R_{DS(ON)}$	-	-	1.6	Ω
			-	-	2.0	
Forward Transconductance	$V_{DS}=10\text{V}, I_D=200\text{mA}$	g_{FS}	-	550	-	mS
Input Capacitance	$V_{DS}=10\text{V}, f=1\text{MHz}$	C_{iss}	-	33	-	pF
Output Capacitance		C_{oss}	-	7	-	pF
Reverse Transfer Capacitance		C_{rss}	-	4	-	pF
Turn-On Delay Time		$t_{d(on)}$	-	5	-	ns
Turn-On Rise Time	$V_{DS}=50\text{V}, R_L=250\Omega,$ $V_{GS}=10\text{V}, R_{GEN}=6\Omega$	t_r	-	6	-	ns
Turn-Off Delay Time		$t_{d(off)}$	-	12	-	ns
Turn-Off Fall Time		t_f	-	7	-	ns



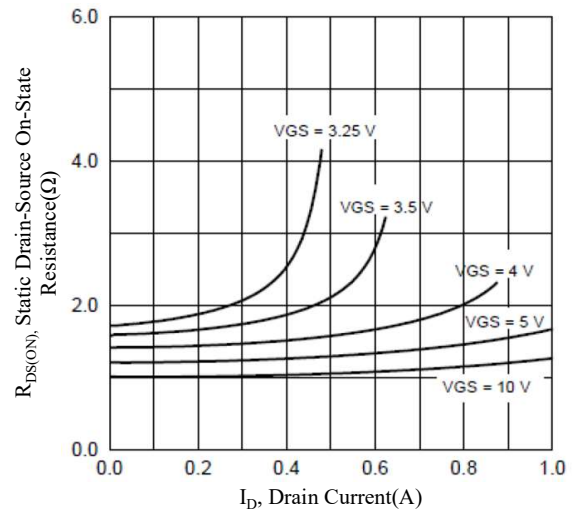
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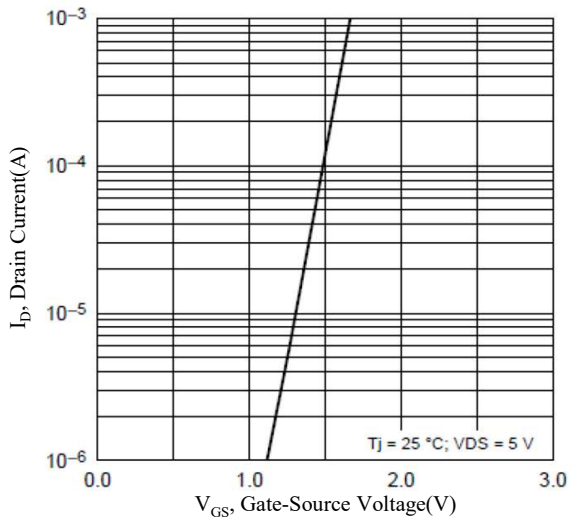
RATINGS AND CHARACTERISTIC CURVES



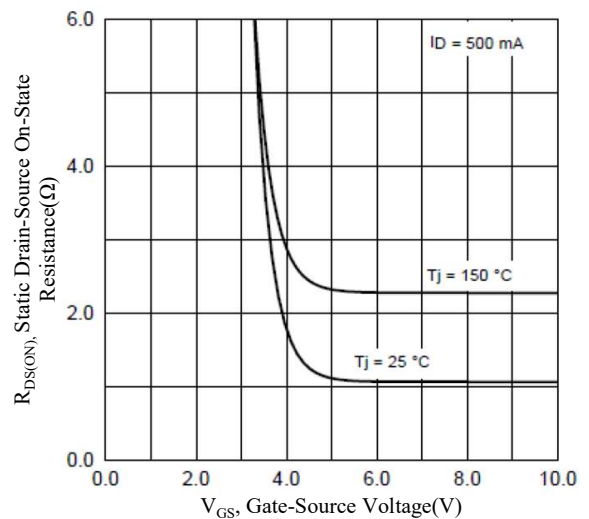
Typical Output Characteristics



Static Drain-Source On-State resistance vs Drain Current



Typical Transfer Characteristic



Static Drain-Source On-State Resistance vs Gate-Source Voltage