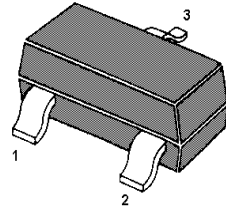
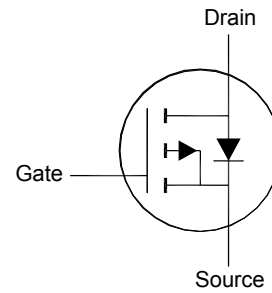


MMFTP2305

P-Channel Enhancement Mode MOSFET



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



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DSS}$	8	V
Gate-Source Voltage	V_{GS}	± 8	V
Drain Current - Continuous	$-I_D$	3.5	A
Drain Current - Pulse ¹⁾	$-I_{DM}$	12	A
Total Device Dissipation ¹⁾	P_{tot}	1.1	W
Operating Junction Temperature	T_j	- 55 to + 150	°C
Storage Temperature	T_{stg}	- 55 to + 150	°C

¹⁾ Surface Mounted on 1in² pad area, $t \leq 10s$.

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient ¹⁾	$R_{\theta JA}$	110	°C/W

¹⁾ Pulse test; pulse width $\leq 300 \mu s$ duty cycle $\leq 2\%$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at $-I_D = 250 \mu\text{A}$	$-V_{(BR)DSS}$	8	-	-	V
Drain-Source Leakage Current at $-V_{DS} = 6.4 \text{ V}$	$-I_{DSS}$	-	-	1	μA
Gate Leakage Current at $V_{GS} = \pm 8 \text{ V}$	I_{GSS}	-	-	± 100	nA
On state drain current at $-V_{GS} = 4.5 \text{ V}$, $-V_{DS} \leq 5 \text{ V}$ at $-V_{GS} = 2.5 \text{ V}$, $-V_{DS} \leq 5 \text{ V}$	$-I_{D(ON)}$	6 3	- -	- -	A
Gate-Source Threshold Voltage at $V_{DS} = V_{GS}$, $-I_D = 250 \mu\text{A}$	$-V_{GS(th)}$	0.45	-	0.8	V
Drain-Source On-State Resistance at $-V_{GS} = 1.8 \text{ V}$, $-I_D = 2 \text{ A}$ at $-V_{GS} = 2.5 \text{ V}$, $-I_D = 3 \text{ A}$ at $-V_{GS} = 4.5 \text{ V}$, $-I_D = 3.5 \text{ A}$	$R_{DS(on)1}$	- - -	- - -	118 81 68	m Ω
Forward Transconductance at $-V_{DS} = 5 \text{ V}$, $-I_D = 3.5 \text{ A}$	g_{FS}	-	8.5	-	S
Input Capacitance at $-V_{DS} = 4 \text{ V}$, $f = 1 \text{ MHz}$	C_{iss}	-	1245	-	pF
Output Capacitance at $-V_{DS} = 4 \text{ V}$, $f = 1 \text{ MHz}$	C_{oss}	-	375	-	pF
Reverse Transfer Capacitance at $-V_{DS} = 4 \text{ V}$, $f = 1 \text{ MHz}$	C_{rss}	-	210	-	pF
Turn-On Delay Time at $-V_{DD} = 4 \text{ V}$, $-V_{GEN} = 4.5 \text{ V}$, $-I_D = 1 \text{ A}$, $R_G = 6 \Omega$, $R_L = 4 \Omega$	$t_{d(on)}$	-	-	20	ns
Turn-Off Delay Time at $-V_{DD} = 4 \text{ V}$, $-V_{GEN} = 4.5 \text{ V}$, $-I_D = 1 \text{ A}$, $R_G = 6 \Omega$, $R_L = 4 \Omega$	$t_{d(off)}$	-	-	80	ns
Turn-On Rise Time at $-V_{DD} = 4 \text{ V}$, $-V_{GEN} = 4.5 \text{ V}$, $-I_D = 1 \text{ A}$, $R_G = 6 \Omega$, $R_L = 4 \Omega$	t_r	-	-	40	ns
Turn-Off Fall Time at $-V_{DD} = 4 \text{ V}$, $-V_{GEN} = 4.5 \text{ V}$, $-I_D = 1 \text{ A}$, $R_G = 6 \Omega$, $R_L = 4 \Omega$	t_f	-	-	35	ns

Drain-Source Body Diode Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
Continuous Source-Drain Diode Current($T_C = 25^\circ\text{C}$)	$-I_S$	-	-	1.6	A
Body Diode Voltage at $-I_S = 1.6 \text{ A}$, $V_{GS} = 0 \text{ V}$	V_{SD}	-	-	1.2	V

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Dated: 07/08/2015 Rev: 02 CL

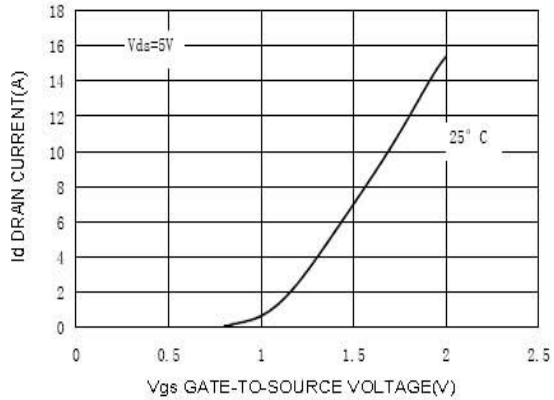


Figure 1. Transfer Characteristics

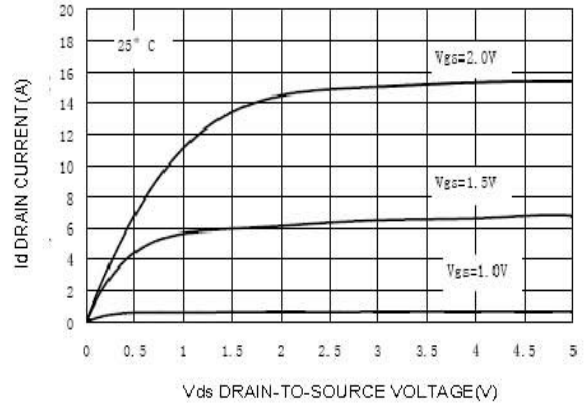


Figure 2. On-Region Characteristics

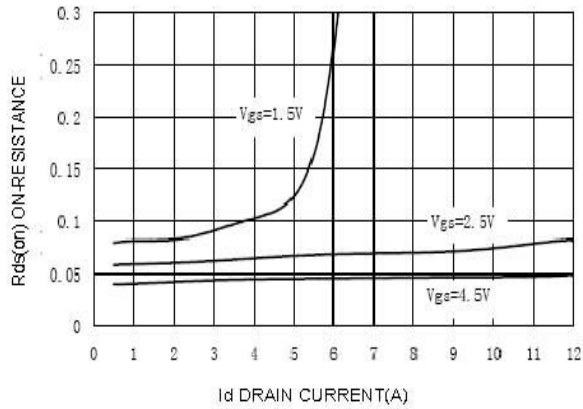


Figure 3. On-Resistance versus Drain Current

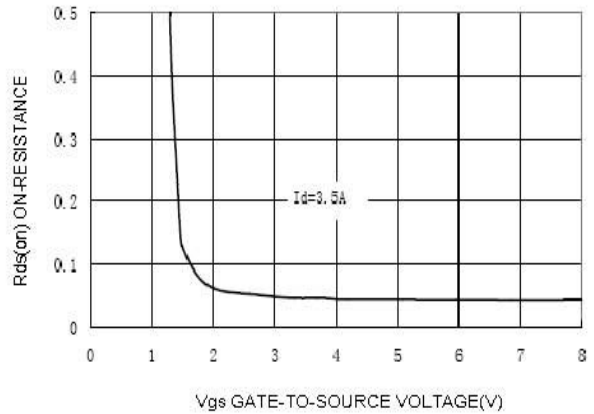


Figure 4. On-Resistance vs. Gate-to-Source Voltage

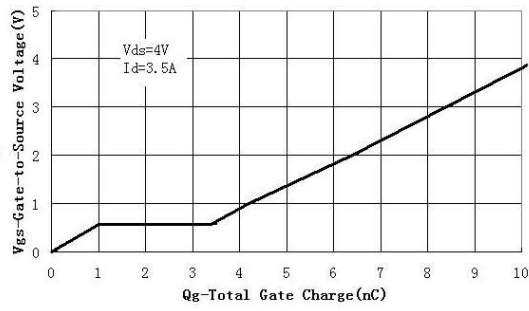


Figure 5. Gate Charge

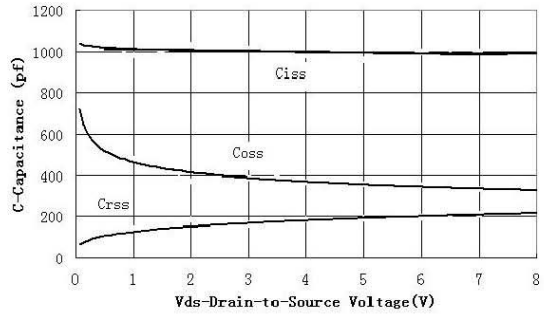


Figure 6. Capacitance

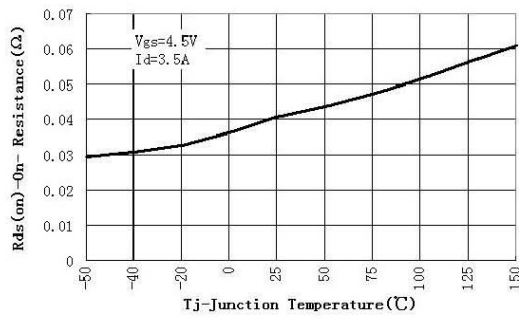


Figure 7. On-Resistance Vs Junction Temperature