



M-MOS Semiconductor Sdn. Bhd.

70V N-Channel Enhancement-Mode MOSFET

$V_{DS} = 70V$

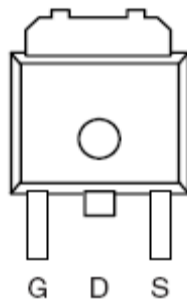
$R_{DS(ON)}, V_{GS} @ 10V, I_{ds} @ 8A = 74m\Omega$

$R_{DS(ON)}, V_{GS} @ 4.5V, I_{ds} @ 2A = 90m\Omega$

Features

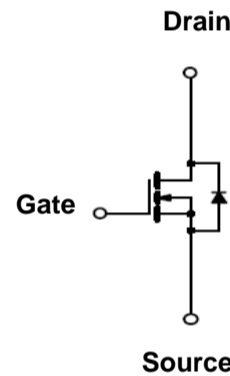
- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- High Power and Current handing capability
- Fully Characterized Avalanche Voltage and Current

TO-252



Top View

Internal Schematic Diagram



N-Channel MOSFET

Maximum Ratings and Thermal Characteristics ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	70	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	8	A
Pulsed Drain Current ¹⁾	I_{DM}	30.4	
Maximum Power Dissipation	P_D	2.78	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 175	$^\circ C$
Avalanche Energy with Single Pulse	EAS	300	mJ
Junction-to-Ambient Thermal Resistance (PCB mounted) ²⁾	$R_{\theta JA}$	45	$^\circ C/W$

Note: 1. Repetitive Rating: Pulse width limited by the maximum junction temperature

2. 1-in² 2oz Cu PCB board

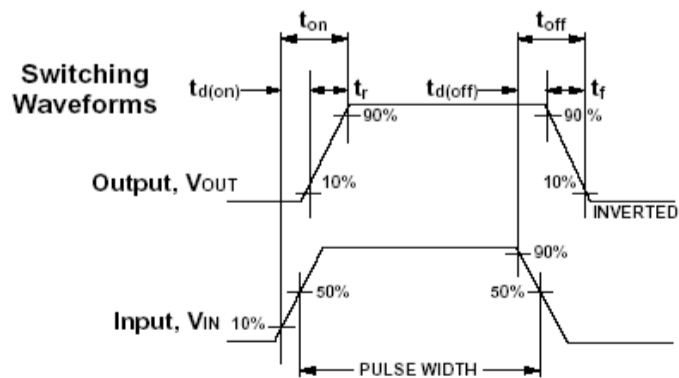
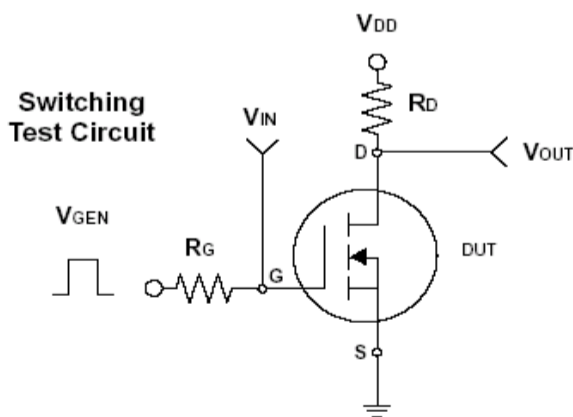
3. Guaranteed by design; not subject to production testing



ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	70			V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 8A$		47.4	74.0	$m\Omega$
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 2A$		50.6	90.0	$m\Omega$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.76	3	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 56V, V_{GS} = 0V$			1	μA
Gate Body Leakage	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Dynamic³⁾						
Total Gate Charge	Q_g	$V_{DS} = 30V, I_D = 3.5A$ $V_{GS} = 10V$		10.462		
Gate-Source Charge	Q_{gs}			3.318		
Gate-Drain Charge	Q_{gd}			1.960		
Turn-On Delay Time	$t_{d(on)}$	$V_{ds}=30V, R_L=30\Omega$ $V_{gs} = 10V$ $R_G = 6\Omega$		9.667		ns
Turn-On Rise Time	t_r			4.460		
Turn-Off Delay Time	$t_{d(off)}$			36.895		
Turn-Off Fall Time	t_f			3.808		
Input Capacitance	C_{iss}	$V_{DS} = 30V, V_{GS} = 0V$ $f = 200\text{ KHz}$		678.360		pF
Output Capacitance	C_{oss}			45.671		
Reverse Transfer Capacitance	C_{rss}			31.254		
Source-Drain Diode						
Max. Diode Forward Current	I_S				30	A
Diode Forward Voltage	V_{SD}	$I_S = 30A, V_{GS} = 0V$			1.3	V

Note: Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$





Notice

- 1. Specification of the products displayed herein are subject to change without notice. Continuous development may necessitate changes in technical data without notice. M-MOS Semiconductor Sdn. Bhd. or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.**
- 2. Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.**