M-MOS Semiconductor Hong Kong Limited

30 V P-Channel Enhancement-Mode MOSFET

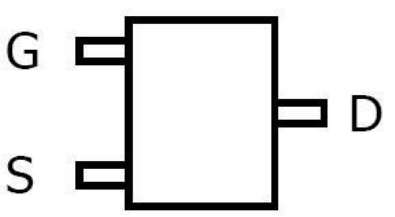
V_{DS}= - 30 V

$R_{DS(ON)}$, V_{gs}@-4.5V , I_{ds}@ - 2.1 A = 120.0 mΩ
$R_{DS(ON)}$, V_{gs}@-2.5V , I_{ds}@ - 1.5 A = 167.0 mΩ
$R_{DS(ON)}$, V_{gs}@-1.8V , I_{ds}@ - 1.1 A = 702.0 mΩ

Features

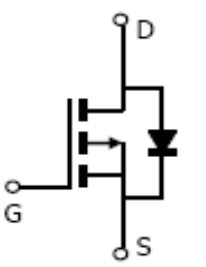
Advanced trench process technology
High Density Cell Design
General Application

SOT- 23



Top View

Internal Schematic Diagram



P-Channel MOSFET

Maximum Ratings and Thermal Characteristics *(T_A = 25°C unless otherwise noted)*

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	- 30	V
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current [1)]		I_D	2.23	A
Pulsed Drain Current [2)]		I_{DM}	8.46	
Maximum Power Dissipation	TA = 25°C	P_D	0.89	W
	TA = 75°C		0.54	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted) [3)]		$R_{\theta JA}$	140	°C/W

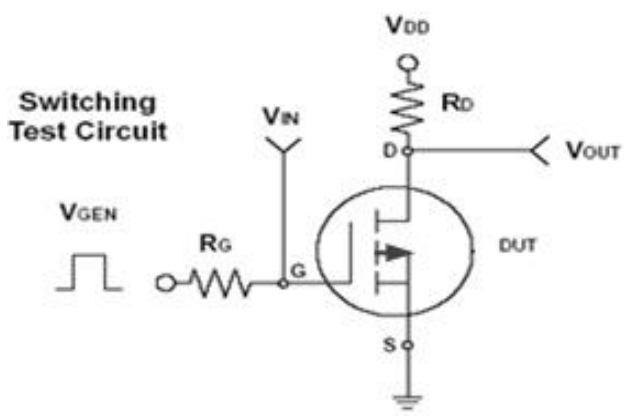
Note: *1. Fused current that based on wire numbers and diameter*
2. Repetitive Rating: Pulse width limited by the maximum junction temperature
3. 1-in² 2oz Cu PCB board

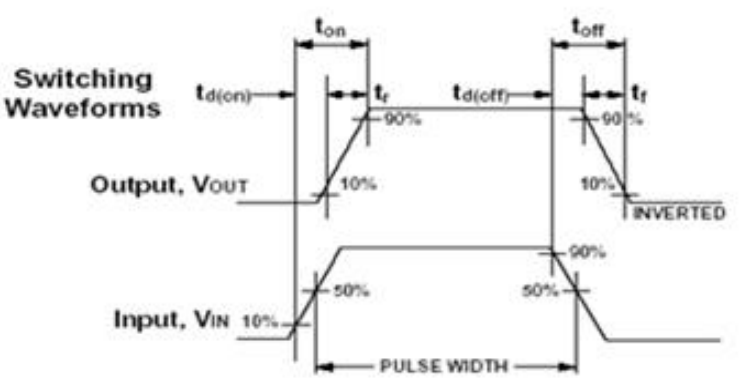
V 1.4C

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = 250uA	- 30			V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -4.5V, I_D = - 2.1 A		91	120.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -2.5V, I_D = - 1.5 A		127	167.0	
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} = -1.8V, I_D = - 0.5 A		539	702.0	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D = 250uA	-0.5	-0.97	-1.5	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = - 12 V, V_{GS} = 0V			-1	uA
Gate Body Leakage	I_{GSS}	V_{GS} = ± 30 V, V_{DS} = 0V			±100	nA
Dynamic[3)]						
Total Gate Charge	Q_g	Vds= -6V, Id = -1.5A		4.00		nC
Gate-Source Charge	Q_{gs}	V_{GS} = -4.5V		1.00		
Gate-Drain Charge	Q_{gd}			1.70		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -6V, ID = -1A,		15.46		ns
Turn-On Rise Time	t_r	V_{GEN} = -4.5V, RG = 6Ω		6.04		
Turn-Off Delay Time	$t_{d(off)}$			78.47		
Turn-Off Fall Time	t_f			28.13		
Input Capacitance	C_{iss}	V_{DS} = -6V, V_{GS} = 0V		496.50		pF
Output Capacitance	C_{oss}	f = 200KHz		55.00		
Reverse Transfer Capacitance	C_{rss}			42.75		
Source-Drain Diode						
Max. Diode Forward Current	I_S					A
Diode Forward Voltage	V_{SD}	I_S = -1.6A, V_{GS} = 0V				V

Note: Pulse test: pulse width <= 300us, duty cycle<= 2%





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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.