



FMS05P30B 30V P-Channel Enhancement-Mode MOSFET

$V_{DS} = -30V$

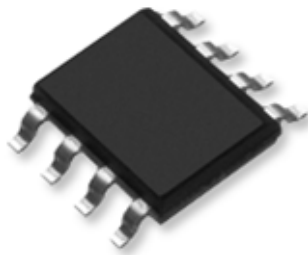
$R_{DS(ON)}, V_{GS}@-10V, I_{DS}@-5.3A = 42m\Omega$

$R_{DS(ON)}, V_{GS}@-4.5V, I_{DS}@-4.2A = 40m\Omega$

Features

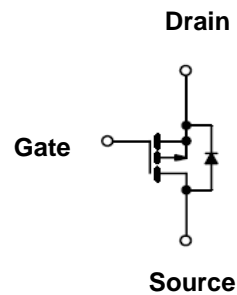
- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- Fully Characterized Avalanche Voltage and Current
- Improved Shoot-Through FOM

SOP-08



Top View

Internal Schematic Diagram



P-Channel MOSFET

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

Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	V_{DS}	-30	V	
Gate-Source Voltage	V_{GS}	± 20		
Continuous Drain Current	I_D	-5.3	A	
Pulsed Drain Current ¹⁾	I_{DM}	-20		
Maximum Power Dissipation	P_D	$T_A = 25^\circ C$	2.5	W
		$T_A = 75^\circ C$		
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ C$	
Avalanche Energy with Single Pulse $I_D=50A, V_{DD}=25V, L=0.5mH$	E_{AS}		mJ	
Junction-to-Case Thermal Resistance	$R_{\theta JC}$	30	$^\circ C/W$	
Junction-to-Ambient Thermal Resistance (PCB mounted) ²⁾	$R_{\theta JA}$	50		

Note: 1. Maximum DC current limited by the package
 2. 1-in² 2oz Cu PCB board



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ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = -250\mu A$	-30	-	-	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -4.2A$		56.0	70.0	m Ω
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -5.3A$		33.0	42.0	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.7	-3.0	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
Gate Body Leakage	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Gate Resistance	R_g					Ω
Forward Transconductance	g_{fs}	$V_{DS} = -15V, I_D = -5.3A$	4	7		S
Dynamic						
Total Gate Charge	Q_g	$V_{DS} = -15V, I_D = -5.3A$ $V_{GS} = -10V$		18.09		nC
Gate-Source Charge	Q_{gs}			6.25		
Gate-Drain Charge	Q_{gd}			3.25		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15V, R_L = 15\Omega$ $I_D = -1A, V_{GEN} = -10V$ $R_G = 6\Omega$		20.52		ns
Turn-On Rise Time	t_r			4.43		
Turn-Off Delay Time	$t_{d(off)}$			42.81		
Turn-Off Fall Time	t_f			7.35		
Input Capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V$ $f = 1.0\text{ MHz}$		1047.98		pF
Output Capacitance	C_{oss}			172.82		
Reverse Transfer Capacitance	C_{rss}			115.50		
Source-Drain Diode						
Max. Diode Forward Current	I_S				-1.9	A
Diode Forward Voltage	V_{SD}	$I_S = -5.3A, V_{GS} = 0V$			-1.3	V

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

