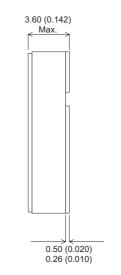


FQA47P06SMD2

MECHANICAL DATA

Dimensions in mm (inches)

1 27 (0.050)3.68 (0.145) min. 3.68 (0.145) 3.43 (0.135) 3.43 (0.135) 4.11 (0.162) 3 3.87 (0.152) 17.65 (0.695) 17.40 (0.685) (0.480) 6 8 11.30 (0.445) 11.05 (0.435) 13 46 (0 530) 13.21 (0.520)



P-CHANNEL **POWER MOSFET**

VDSS -60V I_{D(cont)} -55A R_{DS(on)} 0.026Ω

FEATURES

- HERMETICALLY SEALED SMD2 **CERAMIC PACKAGE**
- SIMPLE DRIVE REQUIREMENTS
- SCREENING OPTIONS AVAILABLE

SMD2 (TO276-AC) Ceramic Package

PAD 1 - Source

PAD 2 - Drain

PAD 3 - Gate

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

$\overline{V_{DSS}}$	Drain – Source Voltage	-60V		
I _D	Continuous Drain Current $(V_{GS} = 0, T_{case} = 25^{\circ}C)$	–55A		
I _D	Continuous Drain Current $(V_{GS} = 0, T_{case} = 100^{\circ}C)$	–38.9A		
I_{DM}	Pulsed Drain Current ¹	–220A		
P_{D}	Power Dissipation @ T _{case} = 25°C	150W		
	Linear Derating Factor	1.0W/°C		
E _{AS}	Single Pulse Avalanche Energy ²	820mJ		
I_{AR}	Avalanche Current ¹	–55A		
E_AR	Repetitive Avalanche Energy ¹	21.4mJ		
dv/dt	Peak Diode Recovery ³	-7.0V/ns		
T_J , T_stg	Operating and Storage Temperature Range	−55 to +175°C		
TL	Lead Temperature 1.6mm (0.63") from case for 10 sec.	300°C		

Notes

- 1) Repetitive Rating Pulse width limited by maximum junction temperature.
- 2) @ V_{DD} = -25V , L = 0.315mH , R_G = 25 Ω , I_{AS} = -55A , Starting T_J = 25°C
- 3) @ $I_{SD} \leq -47 A$, di/dt $\leq -300 A/\mu s$, $V_{DD} \leq BV_{DSS}$, $T_J \leq 25^{\circ} C$

Semelab PIc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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FQA47P06SMD2

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

	Parameter		Test Conditions		Тур.	Max.	Unit
	STATIC ELECTRICAL RATINGS	•			•	•	
BV _{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$	$I_D = -250 \mu A$	-60			V
ΔBV_{DSS}	Temperature Coefficient of	Reference to 25°C			-0.06		V/°C
ΔT_{J}	Breakdown Voltage	$I_D = -250 \mu A$			-0.00		V / C
R _{DS(on)}	Static Drain – Source On–State Resistance ¹	$V_{GS} = -10V$	_		0.021	0.026	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$	$I_D = -250 \mu A$	-2		-4	V
9 _{fs}	Forward Transconductance ¹	$V_{DS} = -30V$	$I_{DS} = -27.5A$		22		S
I _{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = -60V$				-1	μА
	$(V_{GS} = 0)$	$V_{DS} = -48V$	$T_C = 125$ °C			-10	
I_{GSS}	Forward Gate – Source Leakage	$V_{GS} = -25V$ $V_{GS} = 25V$				-100	nA
I _{GSS}	Reverse Gate – Source Leakage					100	
	DYNAMIC CHARACTERISTICS	•					
C _{iss}	Input Capacitance	$V_{GS} = 0$			2800		pF
C _{oss}	Output Capacitance	$V_{DS} = -25V$			1300		
C _{rss}	Reverse Transfer Capacitance	f = 1MHz			320		
Q_g	Total Gate Charge	$V_{GS} = -10V$			84	110	
Q _{gs}	Gate – Source Charge	$I_{D} = -47A$			18		nC
Q_{gd}	Gate – Drain ("Miller") Charge	$V_{DS} = -48V$			44		
t _{d(on)}	Turn-On Delay Time	V _{DD} = -30V			50	110	
t _r	Rise Time	$I_{D} = -30V$ $I_{D} = -23.5A$			450	910	l ne
t _{d(off)}	Turn-Off Delay Time	$R_{G} = 25.5A$			100	210	ns
t _f	Fall Time				195	400	
	SOURCE - DRAIN DIODE CHARAC	TERISTICS					
I _S	Continuous Source Current					-55A	
I _{SM}	Pulse Source Current ²	1				-220A	Α
V _{SD}	Diode Forward Voltage	$I_{S} = -55A$	$V_{GS} = 0$			-4.0	V
t _{rr}	Reverse Recovery Time	$V_{GS} = 0$			130		ns
Q _{rr}	Reverse Recovery Charge	I _F = -47A	$di/dt = 100A/\mu s$		0.55		μС

Notes

- 1) Pulse Test: Pulse Width $\leq 300 \mu s$, $\delta \leq 2\%$
- 2) Repetitive Rating Pulse width limited by maximum junction temperature.

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