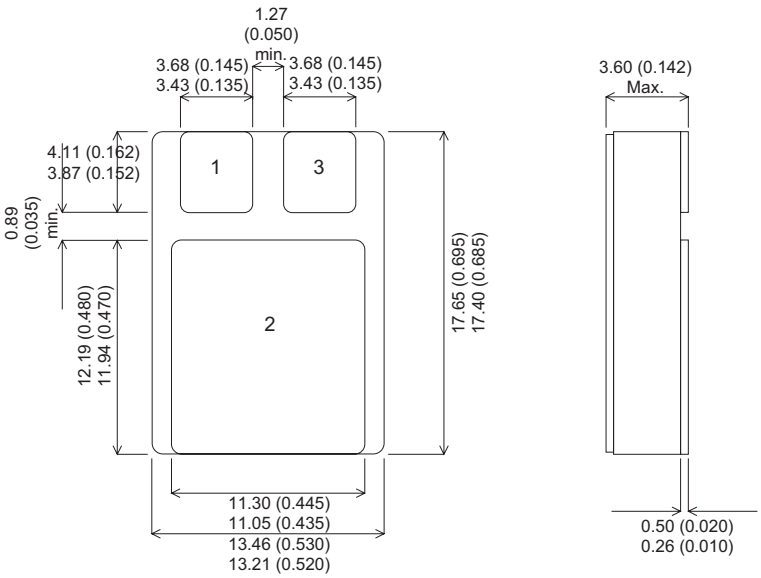
FQA47P06SMD2

MECHANICAL DATA
Dimensions in mm (inches)



P–CHANNEL POWER MOSFET

V_{DSS}	–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)

V_{DSS}	Drain – Source Voltage		–60V
I_D	Continuous Drain Current	(V_{GS} = 0 , T_{case} = 25°C)	–55A
I_D	Continuous Drain Current	(V_{GS} = 0 , T_{case} = 100°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
T_L	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 = 25Ω , I_{AS} = –55A , Starting T_J = 25°C
3) @ I_{SD} ≤ –47A , di/dt ≤ –300A/µs , V_{DD} ≤ BV_{DSS} , T_J ≤ 25°C

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

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
	STATIC ELECTRICAL RATINGS						
BV_{DSS}	Drain – Source Breakdown Voltage	V_{GS} = 0	I_D = –250µA	–60			V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I_D = –250µA			–0.06		V/°C
$R_{DS(on)}$	Static Drain – Source On–State Resistance [1]	V_{GS} = –10V	I_D = –27.5A		0.021	0.026	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}	I_D = –250µA	–2		–4	V
g_{fs}	Forward Transconductance[1]	V_{DS} = –30V	I_{DS} = –27.5A		22		S
I_{DSS}	Zero Gate Voltage Drain Current (V_{GS} = 0)	V_{DS} = –60V				–1	µA
		V_{DS} = –48V	T_C = 125°C			–10	
I_{GSS}	Forward Gate – Source Leakage	V_{GS} = –25V				–100	nA
I_{GSS}	Reverse Gate – Source Leakage	V_{GS} = 25V				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	nC
Q_{gs}	Gate – Source Charge	I_D = –47A			18		
Q_{gd}	Gate – Drain (“Miller”) Charge	V_{DS} = –48V			44		
$t_{d(on)}$	Turn–On Delay Time	V_{DD} = –30V I_D = –23.5A R_G = 25Ω			50	110	ns
t_r	Rise Time				450	910	
$t_{d(off)}$	Turn–Off Delay Time				100	210	
t_f	Fall Time				195	400	
	SOURCE – DRAIN DIODE CHARACTERISTICS						
I_S	Continuous Source Current					–55A	A
I_{SM}	Pulse Source Current [2]					–220A	
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/µs		0.55		µC

Notes 1) Pulse Test: Pulse Width ≤ 300µs, δ ≤ 2%
2) Repetitive Rating – Pulse width limited by maximum junction temperature.

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