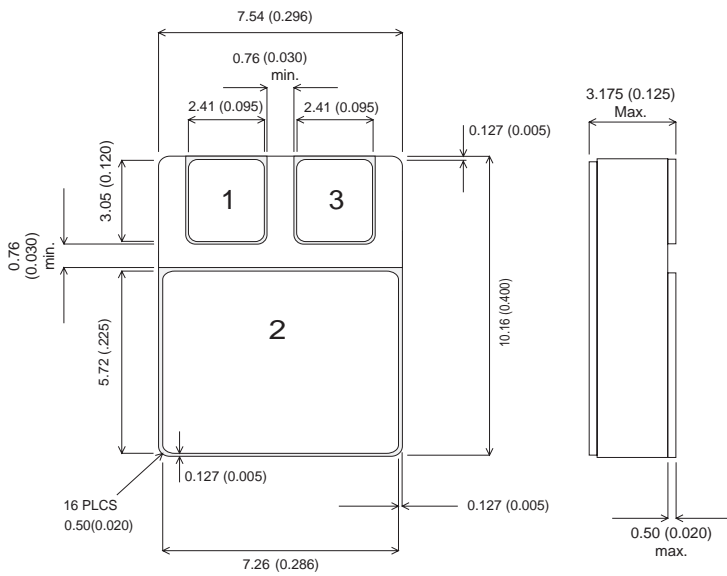


MECHANICAL DATA

Dimensions in mm (inches)



SMD05 (TO-276AA)

PAD1 = SOURCE PAD 2 = DRAIN PAD3 = GATE

**P-CHANNEL
POWER MOSFET
FOR HI-REL
APPLICATIONS**

V_{DS} -55V
 $I_{D(cont)}$ -22A
 $R_{DS(on)}$ 0.065Ω

FEATURES

- HERMETICALLY SEALED
- SIMPLE DRIVE REQUIREMENTS
- LIGHTWEIGHT
- SCREENING OPTIONS AVAILABLE

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

V_{GS}	Gate – Source Voltage	±20V
I_D	Continuous Drain Current @ $T_{case} = 25^{\circ}C$	-22A
I_D	Continuous Drain Current @ $T_{case} = 100^{\circ}C$	-16A
I_{DM}	Pulsed Drain Current	-88A
P_D	Power Dissipation @ $T_{case} = 25^{\circ}C$	75W
	Linear Derating Factor	0.6W/°C
T_J, T_{stg}	Operating and Storage Temperature Range	-55 to 150°C
$R_{\theta JC}$	Thermal Resistance Junction to Case	1.67°C/W max.

Semelab Plc 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.

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS					
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$ $I_D = -250\mu\text{A}$	-55		V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = -1\text{mA}$		-0.049	V/ $^\circ\text{C}$
$R_{DS(on)}$	Static Drain – Source On–State Resistance	$V_{GS} = -10\text{V}$ $I_D = -16\text{A}$		0.065	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = -250\mu\text{A}$	-2		V
g_{fs}	Forward Transconductance	$V_{DS} \geq -25\text{V}$ $I_{DS} = -6\text{A}$	8		S($\bar{5}$)
I_{DSS}	Zero Gate Voltage Drain Current ($V_{GS} = 0$)	$V_{DS} = -55\text{V}$		-25	μA
		$V_{DS} = -44\text{V}$ $T_J = 125^\circ\text{C}$		-250	
I_{GSS}	Forward Gate – Source Leakage	$V_{GS} = -20\text{V}$		-100	nA
I_{GSS}	Reverse Gate – Source Leakage	$V_{GS} = 20\text{V}$		100	
DYNAMIC CHARACTERISTICS					
C_{iss}	Input Capacitance	$V_{GS} = 0$		1290	pF
C_{oss}	Output Capacitance	$V_{DS} = -25\text{V}$		495	
C_{rss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		203	
Q_g	Total Gate Charge	$V_{GS} = -10\text{V}$		70	nC
Q_{gs}	Gate – Source Charge	$V_{DS} = -44\text{V}$		17	
Q_{gd}	Gate – Drain (“Miller”) Charge	$I_D = -16\text{A}$		30	
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = -28\text{V}$		26	ns
t_r	Rise Time	$I_D = -16\text{A}$		125	
$t_{d(off)}$	Turn–Off Delay Time	$R_G = 6.8\Omega$		56	
t_f	Fall Time			74	
SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current			-22*	A
I_{SM}	Pulse Source Current			-88	
V_{SD}	Diode Forward Voltage	$I_S = -16\text{A}$ $T_J = 25^\circ\text{C}$ $V_{GS} = 0$		-1.3	V
t_{rr}	Reverse Recovery Time	$I_S = -16\text{A}$ $T_J = 25^\circ\text{C}$		100	ns
Q_{rr}	Reverse Recovery Charge	$d_i / d_t \leq -100\text{A}/\mu\text{s}$ $V_{DD} \leq -30\text{V}$		250	nC

* Current Limited by package