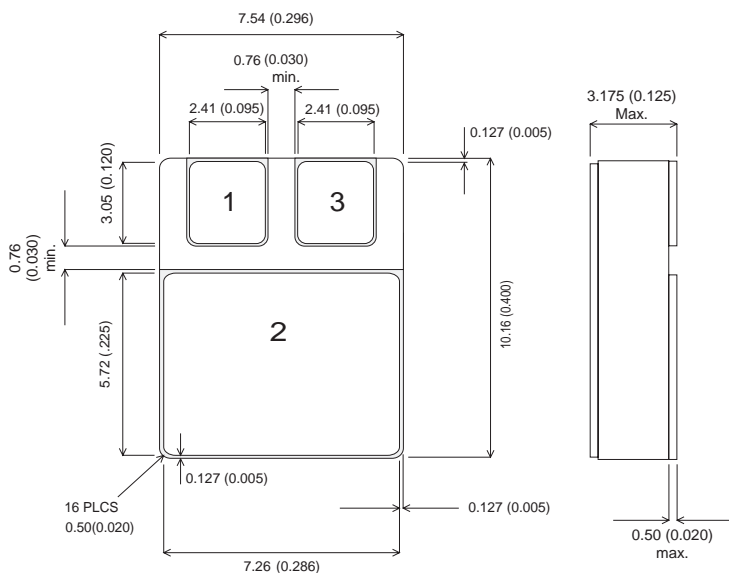


MECHANICAL DATA

Dimensions in mm (inches)


SMD05 (TO-276AA)

PAD1 = SOURCE PAD 2 = DRAIN PAD3 = GATE

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

V_{DSS}	55V
$I_{D(cont)}$	22A
$R_{DS(on)}$	0.016Ω

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 @ $T_{case} = 100^{\circ}C$	22A
I_{DM}	Pulsed Drain Current	88A
P_D	Power Dissipation @ $T_{case} = 25^{\circ}C$	75W
	Linear Derating Factor	0.6 W/°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 $I_D = 1\text{mA}$			0.056	$\text{V}/^\circ\text{C}$
$R_{DS(on)}$	Static Drain – Source On–State Resistance	$V_{GS} = 10\text{V}$	$I_D = 22\text{A}$			0.016 Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$	$I_D = 250\mu\text{A}$	2		4 V
g_{fs}	Forward Transconductance	$V_{DS} \geq 25\text{V}$	$I_{DS} = 22\text{A}$	22		$S(\bar{r})$
I_{DSS}	Zero Gate Voltage Drain Current $V_{GS} = 0$	$V_{DS} = 55\text{V}$	$V_{GS} = 0$			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	$V_{GS} = 0$			1900	pF
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$			620	
C_{rss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$			270	
Q_g	Total Gate Charge	$V_{GS} = 10\text{V}$				101
Q_{gs}	Gate – Source Charge	$V_{DS} = 44\text{V}$				19
Q_{gd}	Gate – Drain (“Miller”) Charge	$I_D = 22\text{A}$				41
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = 28\text{V}$				23
t_r	Rise Time	$I_D = 22\text{A}$				141
$t_{d(off)}$	Turn–Off Delay Time	$R_G = 5.1\Omega$				60
t_f	Fall Time					98
SOURCE – DRAIN DIODE CHARACTERISTICS						
I_S	Continuous Source Current					22*
I_{SM}	Pulse Source Current					88
V_{SD}	Diode Forward Voltage	$I_S = 22\text{A}$	$T_J = 25^\circ\text{C}$			1.3
		$V_{GS} = 0$				V
t_{rr}	Reverse Recovery Time	$I_F = 16\text{A}$	$T_J = 25^\circ\text{C}$			104
Q_{rr}	Reverse Recovery Charge	$d_i / d_t \leq 100\text{A}/\mu\text{s}$		$V_{DD} \leq 30\text{V}$		210
						nC

* Current Limited by package