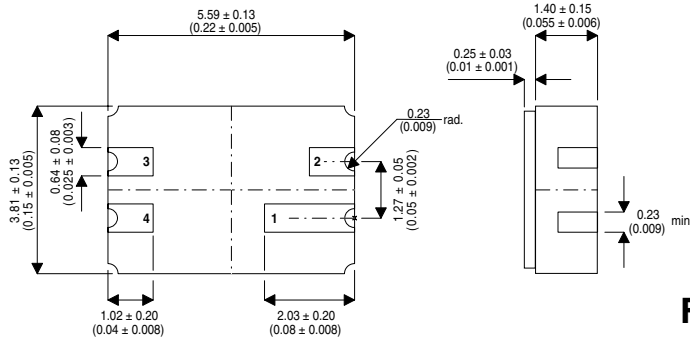


MECHANICAL DATA

Dimensions in mm (inches)



LCC3 PACKAGE (MO-041BA)

(Underside View)

PAD 1 – DRAIN PAD 3 – SOURCE
PAD 2 – N/C PAD 4 – GATE

N-CHANNEL ENHANCEMENT MODE MOSFET

V_{DSS} **60V**
 I_D **1.0A**
 $R_{DS(on)}$ **3.0 Ω**

FEATURES

- Faster switching
- Low Ciss
- Integral Source-Drain Diode
- High Input Impedance and High Gain

DESCRIPTION

This enhancement-mode (normally-off) vertical DMOS FET is ideally suited to a wide range of switching and amplifying applications where high breakdown voltage, high input impedance, low input capacitance, and fast switching speeds are desired.

Hi-Reliability Military and Space screening options available

ABSOLUTE MAXIMUM RATINGS $T_{CASE} = 25^\circ\text{C}$ unless otherwise stated

V_{DS}	Drain - Source Voltage	60V
I_D	Drain Current - Continuous ($T_c = 25^\circ\text{C}$)	1.0A
I_{DM}	Drain Current - Pulsed (Note 1)	3A
V_{GS}	Gate - Source Voltage	$\pm 20\text{V}$
$P_{tot(1)}$	Total Power Dissipation at $T_{mounting\ base} \leq 25^\circ\text{C}$	3.0W
	De-rate Linearly above 25°C	0.020W/ $^\circ\text{C}$
$P_{tot(2)}$	Total Power Dissipation at $T_{ambient} \leq 25^\circ\text{C}$	0.5W
T_j, T_{stg}	Operating and Storage Junction Temperature Range	-55 to +175 $^\circ\text{C}$

THERMAL DATA

R_{thj-mb}	Thermal Resistance Junction – Mounting base	Max	50	$^\circ\text{C/W}$
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NOTES: 1) Repetitive Rating: Pulse Width limited by maximum junction temperature.
2) Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle, $\delta \leq 2\%$

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.

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STATIC ELECTRICAL RATINGS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise stated)

	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)DSS}$	Drain – Source Breakdown Voltage	$V_{GS} = 0V$ $I_D = 10\mu A$	60	-	-	V
$V_{GS(th)}$	Gate – Source threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 1.0mA$	0.8	-	2	
		$T_C = 125^{\circ}\text{C}$	0.3	-	-	
		$T_C = -55^{\circ}\text{C}$	-	-	2.5	
I_{GSS}	Gate – Source Leakage Current	$V_{GS} = \pm 20V$ $V_{DS} = 0V$	-	-	± 100	nA
		$T_C = 125^{\circ}\text{C}$	-	-	± 500	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 48V$ $V_{GS} = 0V$	-	-	1.0	μA
		$T_C = 125^{\circ}\text{C}$	-	-	100	
$I_{D(on)}$	On – State Drain Current (Note 2)	$V_{DS} = 10V$ $V_{GS} = 10V$	1.5	-	-	A
$R_{DS(on)}$	Drain – Source On Resistance (Note 2)	$V_{GS} = 5V$ $I_D = 0.3A$	-	-	5	Ω
		$V_{GS} = 10V$ $I_D = 1.0A$	-	-	3	
		$T_C = 125^{\circ}\text{C}$	-	-	5.6	
g_{FS}	Forward Transconductance (Note 2)	$V_{DS} = 25V$ $I_D = 0.5A$	170	-	-	ms
V_{SD}	Diode Forward Voltage (Note 2)	$V_{GS} = 0V$ $I_s = 1.0A$	0.7	-	1.6	V
t_{rr}	Body Diode Reverse Recovery	$V_{GS} = 0V$ $I_s = 1.0A$	-	350	-	ns

DYNAMIC CHARACTERISTICS

C_{iss}	Input Capacitance	$V_{DS} = 25V$ $f = 1.0MHz$ $V_{GS} = 0V$	-	-	50	pF
C_{oss}	Output Capacitance		-	-	40	
C_{rss}	Reverse Transfer Capacitance		-	-	10	
$T_{d(on)}$	Turn-On Delay	$V_{DD} = 25V$ $I_D = 1.0A$	-	-	10	ns
$T_{d(off)}$	Turn-Off Delay Time	$R_{GS} = 50\Omega$ (Note 3)	-	-	10	

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