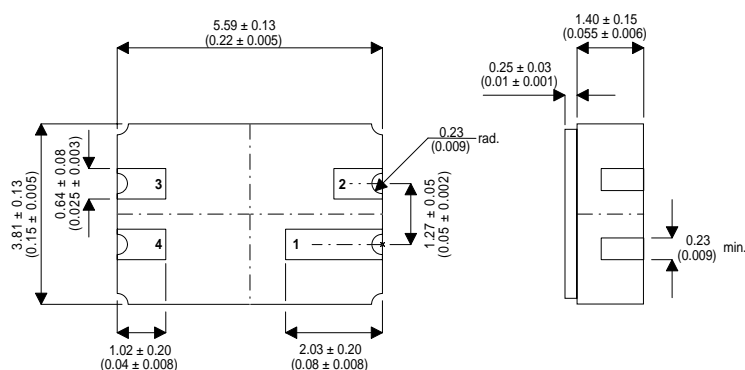


**MECHANICAL DATA**

Dimensions in mm (inches)



**Underside View**

**LCC3 PACKAGE (MO-041BA)**

Pin 1 – Drain    Pin 3 – Source  
Pin 2 – N/C    Pin 4 – Gate

**N-CHANNEL  
ENHANCEMENT MODE  
MOS TRANSISTOR**

**FEATURES**

- Switching Regulators
- Converters
- Motor Drivers
- JAN Level Screening Options
- CECC Screening Options
- Space Quality Level Options

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

$V_{DS}$	Drain – Source Voltage	90V
$V_{GS}$	Gate – Source Voltage	±20V
$I_D$	Drain Current @ $T_{CASE} = 25^{\circ}C$	0.9A
$I_D$	Drain Current @ $T_{CASE} = 100^{\circ}C$	0.7A
$I_{DM}$	Pulsed Drain Current *	3A
$P_D$	Power Dissipation @ $T_{CASE} = 25^{\circ}C$	6.25W
$P_D$	Power Dissipation @ $T_{CASE} = 100^{\circ}C$	2.5W
$T_j$	Operating Junction Temperature Range	-55 to 150°C
$T_{stg}$	Storage Temperature Range	-55 to 150°C
$T_L$	Lead Temperature ( $\frac{1}{16}$ " from case for 10 sec.)	300°C

\* Pulse Width Limited by Maximum Junction Temperature

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**ELECTRICAL CHARACTERISTICS** ( $T_{CASE} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit		
<b>STATIC CHARACTERISTICS</b>							
$V_{(BR)DSS}$	Drain – Source Breakdown Voltage	$V_{GS} = 0V$	$I_D = 10\mu A$	90	120	V	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$	$I_D = 1mA$	0.8	1.6		2
$I_{GSS}$	Gate – Body Leakage Current	$V_{GS} = \pm 15V$ $V_{DS} = 0V$	$T_{CASE} = 125^{\circ}C$			$\pm 100$ $\pm 500$	nA
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = 90V$ $V_{DS} = 72V$	$V_{GS} = 0V$ $V_{GS} = 0V$ $T_{CASE} = 125^{\circ}C$			10 500	$\mu A$
$I_{D(on)*}$	On–State Drain Current	$V_{DS} = 15V$	$V_{GS} = 10V$	1.5	1.8		A
$R_{DS(on)*}$	Drain – Source On Resistance	$V_{GS} = 5V$ $V_{GS} = 10V$ $I_D = 1A$	$I_D = 0.3A$ $T_{CASE} = 125^{\circ}C$		4.2 3.6 6.8	5.3 4 9	$\Omega$
$V_{DS(on)*}$	Drain – Source On Voltage	$V_{GS} = 5V$ $V_{GS} = 10V$ $I_D = 1A$	$I_D = 0.3A$ $T_{CASE} = 125^{\circ}C$		1.26 3.6 6.8	1.6 4 9	V
$g_{FS*}$	Forward Transconductance	$V_{DS} = 10V$	$I_D = 0.5A$	170	350		ms
$g_{OS*}$	Common Source Output Conductance	$V_{DS} = 10V$	$I_D = 0.1A$		225		$\mu s$
<b>DYNAMIC CHARACTERISTICS</b>							
$C_{ds}$	Drain - Source Capacitance	$V_{DS} = 24V$			30	40	pF
$C_{iss}$	Input Capacitance	$V_{GS} = 0V$			35	50	
$C_{oss}$	Output Capacitance	$f = 1MHz$			15	40	
$C_{rss}$	Reverse Transfer Capacitance				2	10	
<b>SWITCHING CHARACTERISTICS</b>							
$t_{ON}$	Turn–On Time	$R_L = 23\Omega$ $I_D = 1A$	$R_G = 25\Omega$		6	10	ns
$t_{OFF}$	Turn–Off Time				8	10	

\* Pulse Test:  $t_p \leq 80 \mu s$ ,  $\delta \leq 1\%$

Parameter	Min.	Typ.	Max.	Unit
$R_{\theta JA}$			210	$^{\circ}C/W$
$R_{\theta JC}$			20	$^{\circ}C/W$

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