

SPECIFICATIONS $T_J = 25\text{ }^{\circ}\text{C}$, unless otherwise noted						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V_{DS}	$V_{DS} = 0\text{ V}, I_D = -250\text{ }\mu\text{A}$	-100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\text{ }\mu\text{A}$	-1		-2.5	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{ V}$			± 250	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -100\text{ V}, V_{GS} = 0\text{ V}$			-1	μA
		$V_{DS} = -100\text{ V}, V_{GS} = 0\text{ V}, T_J = 125\text{ }^{\circ}\text{C}$			-50	
		$V_{DS} = -100\text{ V}, V_{GS} = 0\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$			-250	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} \leq -10\text{ V}, V_{GS} = -10\text{ V}$	-15			A
Drain-Source On-State Resistance ^a	$R_{DS(on)}$	$V_{GS} = -10\text{ V}, I_D = -3.6\text{ A}$		0.162	0.195	Ω
		$V_{GS} = -4.5\text{ V}, I_D = -3.4\text{ A}$		0.175	0.210	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -15\text{ V}, I_D = -3.6\text{ A}$		12		S
Dynamic ^b						
Input Capacitance	C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = -50\text{ V}, f = 1\text{ MHz}$		1055		pF
Output Capacitance	C_{oss}			65		
Reverse Transfer Capacitance	C_{rss}			41		
Total Gate Charge ^c	Q_g	$V_{DS} = -50\text{ V}, V_{GS} = -10\text{ V}, I_D = -3.6\text{ A}$		23.2	34.8	nC
Gate-Source Charge ^c	Q_{gs}	$V_{DS} = -50\text{ V}, V_{GS} = -4.5\text{ V}, I_D = -3.6\text{ A}$		11.7	17.6	
Gate-Drain Charge ^c	Q_{gd}			3.5		
Gate Resistance	R_g	$f = 1\text{ MHz}$	1.2	5.7	11.5	Ω
Turn-On Delay Time ^c	$t_{d(on)}$	$V_{DD} = -50\text{ V}, R_L = 17.2\text{ }\Omega$ $I_D \cong -2.9\text{ A}, V_{GEN} = -10\text{ V}, R_g = 1\text{ }\Omega$		7	14	ns
Rise Time ^c	t_r			12	18	
Turn-Off Delay Time ^c	$t_{d(off)}$			33	50	
Fall Time ^c	t_f			9	18	
Drain-Source Body Diode Ratings and Characteristics $T_C = 25\text{ }^{\circ}\text{C}$ ^b						
Continuous Current	I_S				-8.8	A
Pulsed Current	I_{SM}				-15	
Forward Voltage ^a	V_{SD}	$I_F = -2.9\text{ A}, V_{GS} = 0\text{ V}$		-0.8	-1.5	V
Reverse Recovery Time	t_{rr}	$I_F = -2.9\text{ A}, dI/dt = 100\text{ A}/\mu\text{s}$		50	75	ns
Peak Reverse Recovery Current	$I_{RM(REC)}$			-4	-6	A
Reverse Recovery Charge	Q_{rr}			98	147	nC

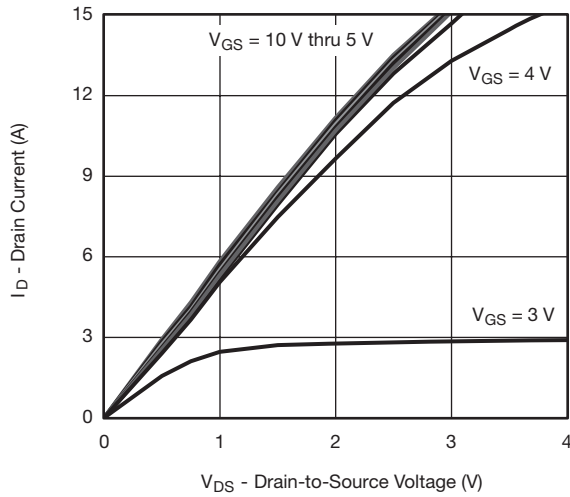
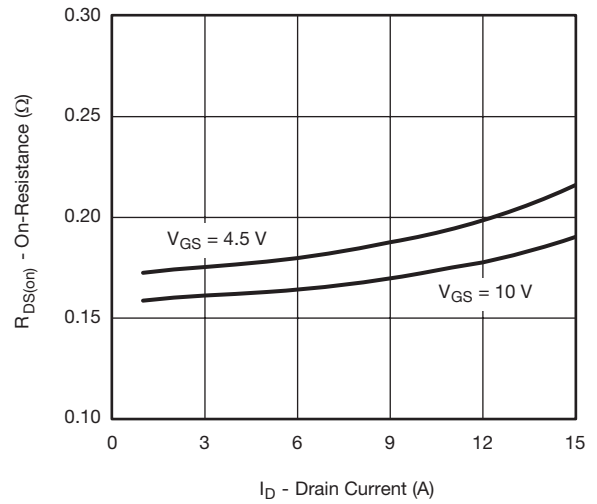
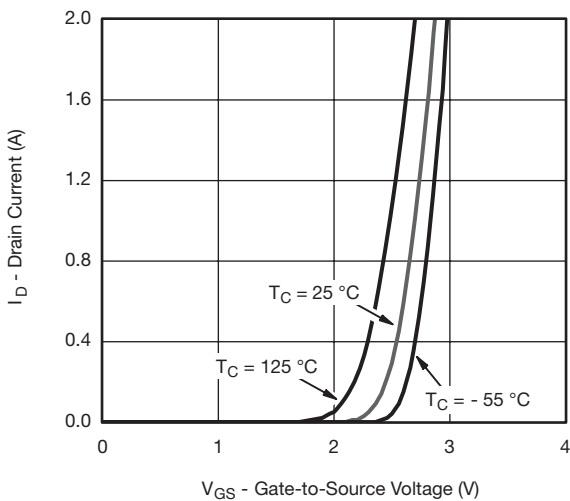
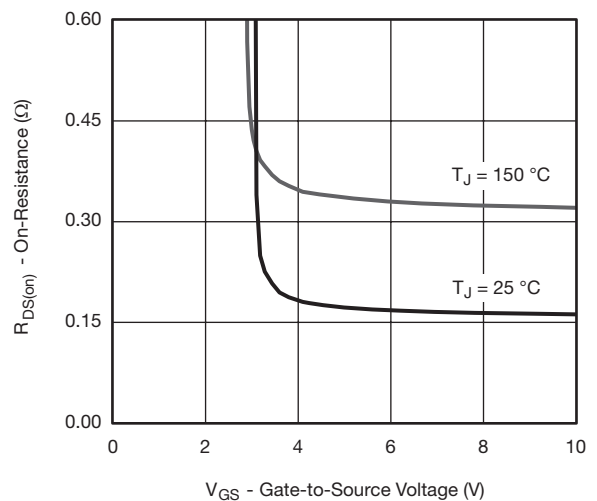
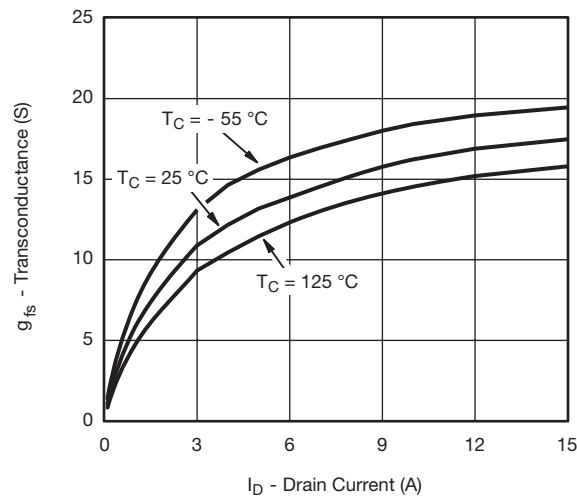
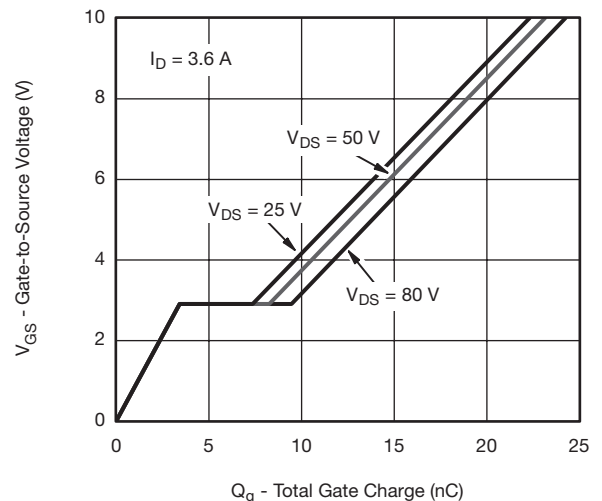
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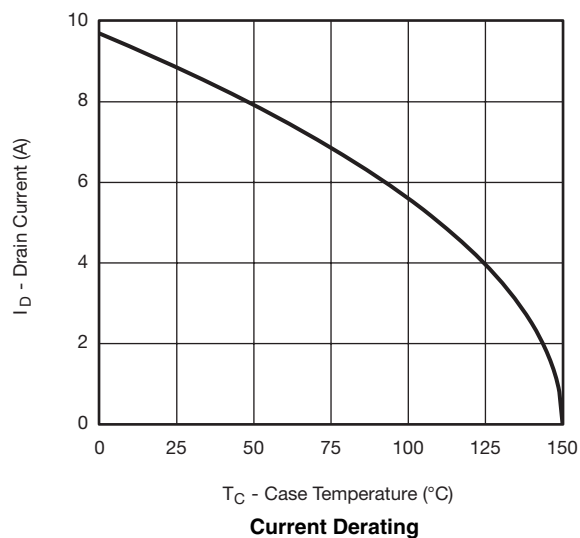
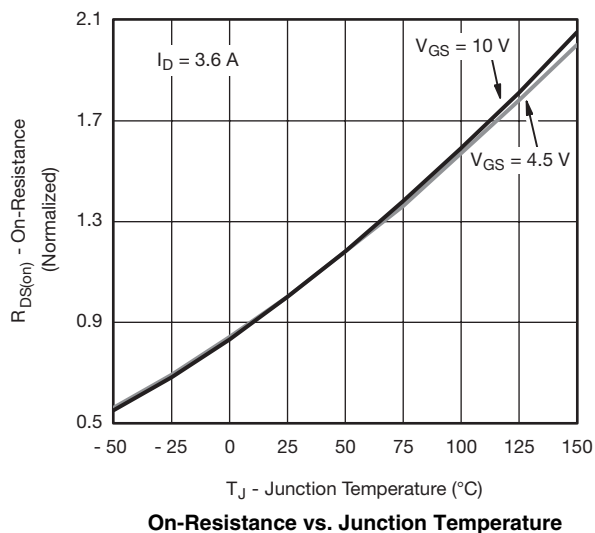
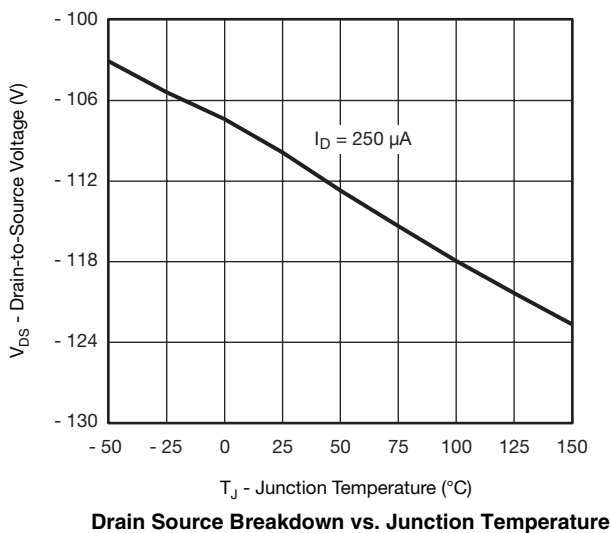
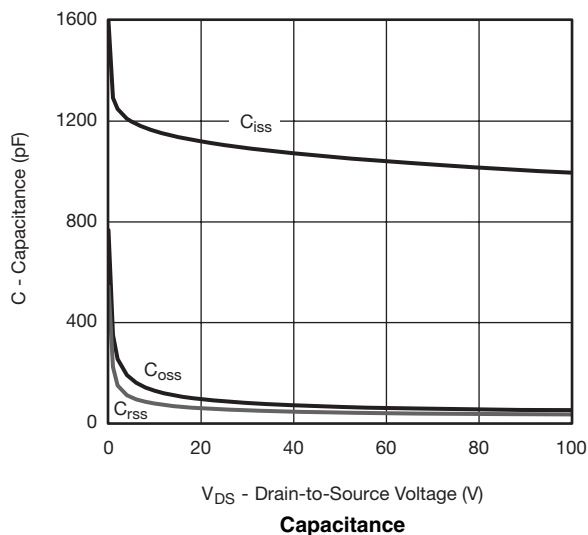
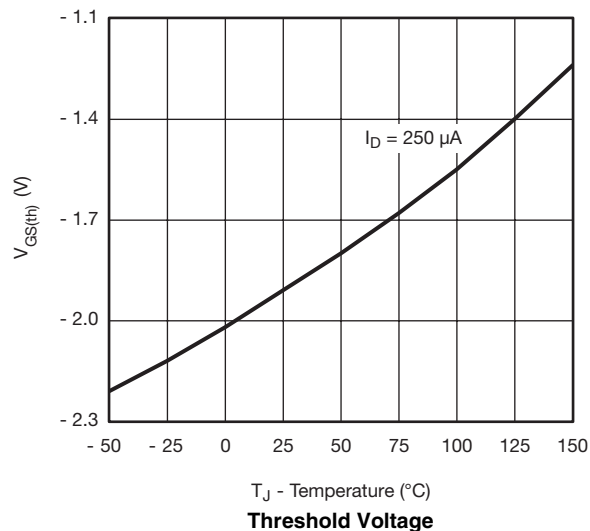
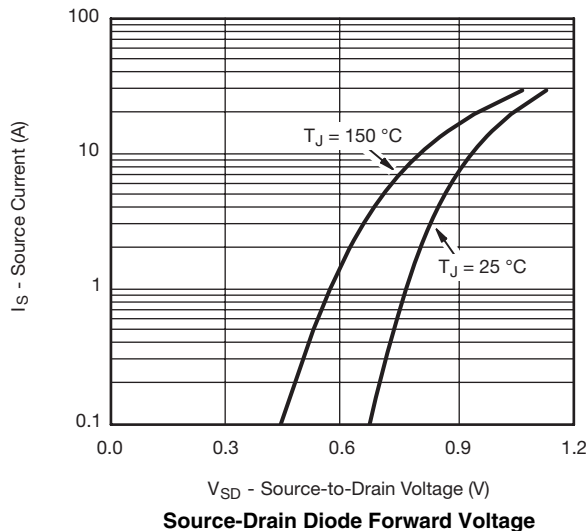
a. Pulse test; pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.

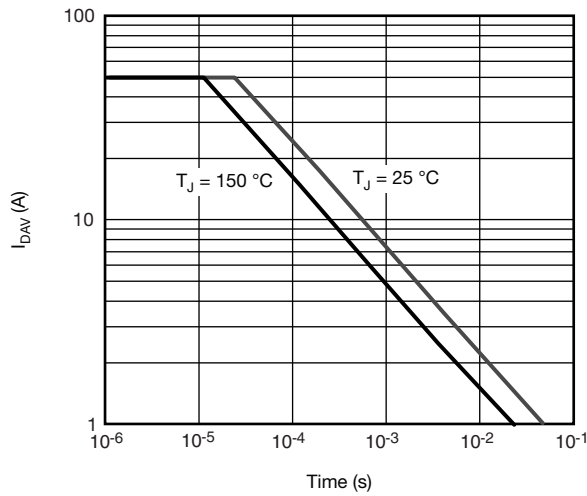
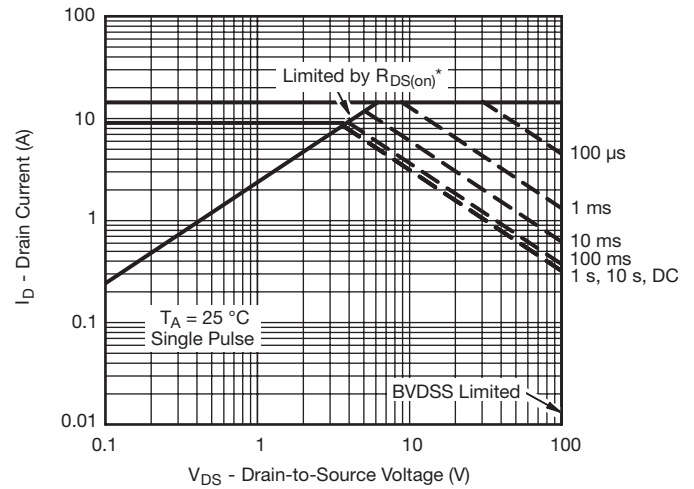
b. Guaranteed by design, not subject to production testing.

c. Independent of operating temperature.

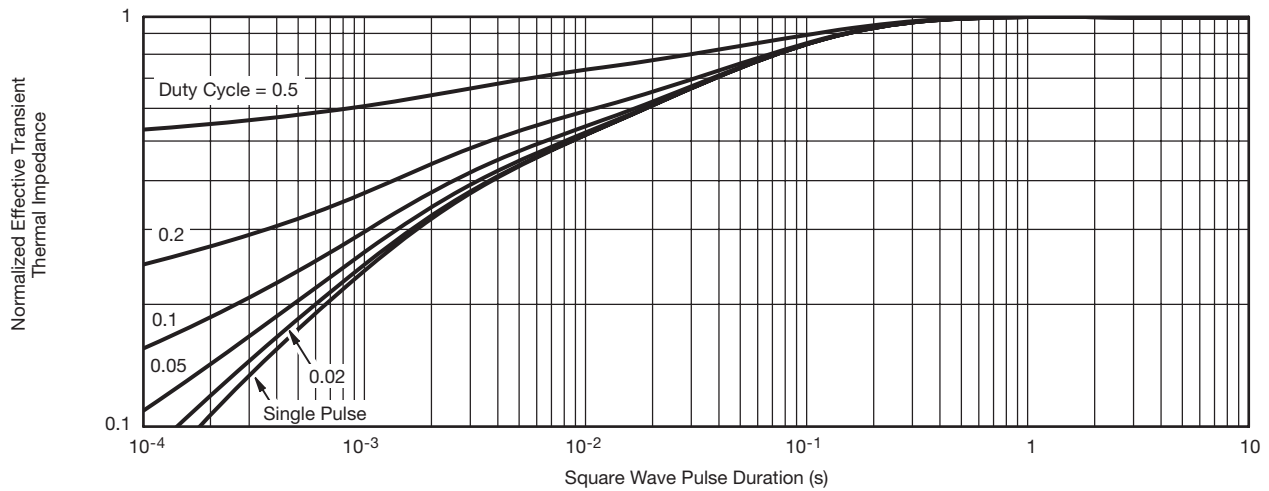
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted

Output Characteristics

On-Resistance vs. Drain Current

Transfer Characteristics

On-Resistance vs. Gate-to-Source Voltage

Transconductance

Gate Charge

TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted

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Single Pulse Avalanche Current Capability vs. Time


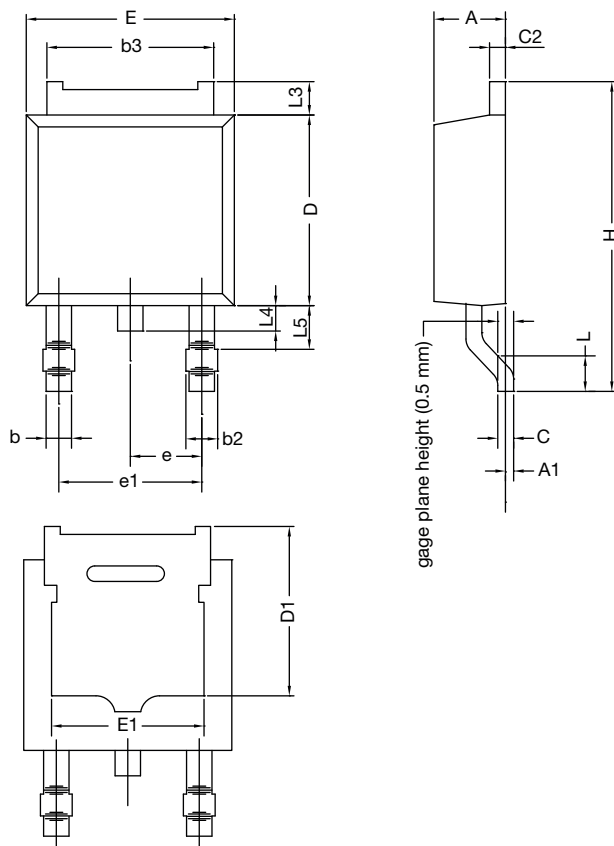
* V_{GS} > minimum V_{GS} at which $R_{DS(on)}$ is specified

Safe Operating Area

Normalized Thermal Transient Impedance, Junction-to-Case

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TO-252AA Case Outline

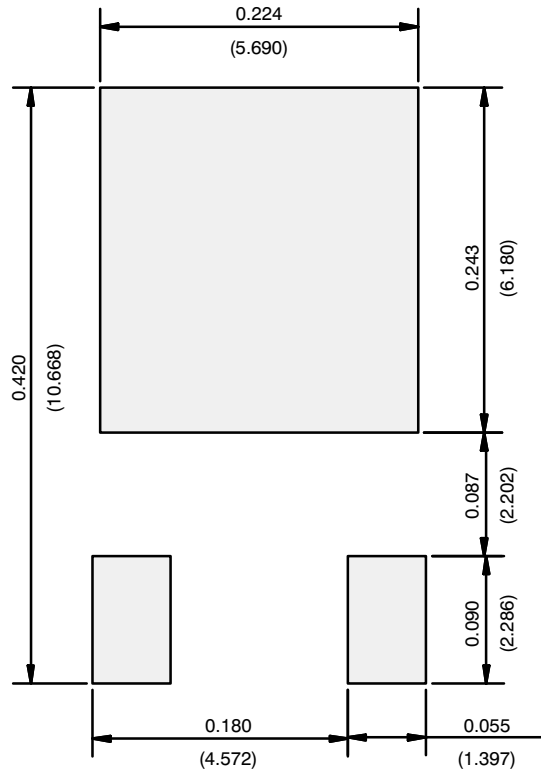


DIM.	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	2.18	2.38	0.086	0.094
A1	-	0.127	-	0.005
b	0.64	0.88	0.025	0.035
b2	0.76	1.14	0.030	0.045
b3	4.95	5.46	0.195	0.215
C	0.46	0.61	0.018	0.024
C2	0.46	0.89	0.018	0.035
D	5.97	6.22	0.235	0.245
D1	4.10	-	0.161	-
E	6.35	6.73	0.250	0.265
E1	4.32	-	0.170	-
H	9.40	10.41	0.370	0.410
e	2.28 BSC		0.090 BSC	
e1	4.56 BSC		0.180 BSC	
L	1.40	1.78	0.055	0.070
L3	0.89	1.27	0.035	0.050
L4	-	1.02	-	0.040
L5	1.01	1.52	0.040	0.060
ECN: T16-0236-Rev. P, 16-May-16 DWG: 5347				

Notes

- Dimension L3 is for reference only.

RECOMMENDED MINIMUM PADS FOR DPAK (TO-252)



Recommended Minimum Pads
Dimensions in Inches/(mm)

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