

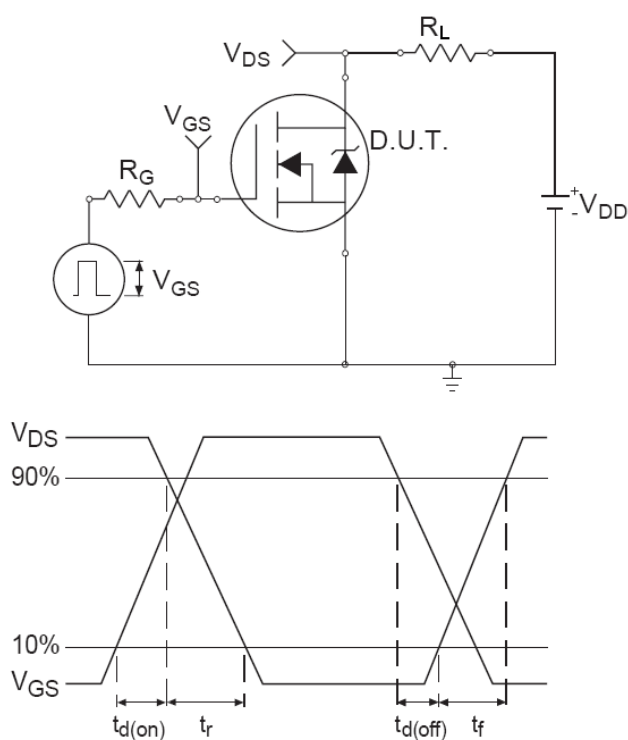
Features

- V_{DSS}=100V/V_{GSS}=±20V/I_D=2.7A
R_{DS(ON)}=180mΩ(Max.)@V_{GS}=10V
R_{DS(ON)}=240mΩ(Max.)@V_{GS}=4.5V
- ESD protect
- Reliable and Rugged
- High Density Cell Design For Ultra Low On-Resistance

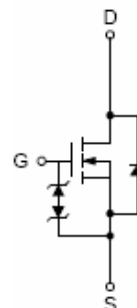
Applications

- Synchronous Rectification
- Power Management in Inverter System

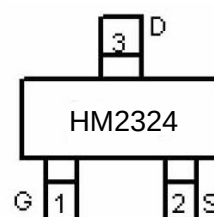
Switching Time Test Circuit and Waveforms



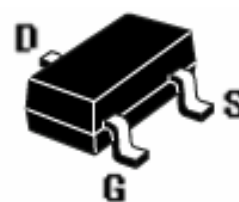
Pin Description



Marking and pin Assignment



Marking and pin Assignment



SOT-23 -3L top view

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
HM2324	HM2324	SOT-23-3L	-	-	-

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Symbol	Parameter		Typical	Unit
V _{DSS}	Drain-Source Voltage		100	V
V _{GSS}	Gate –Source Voltage		±20	V
I _D ¹	Continuous Drain Current	T _C =70°C	2.1	A
			2.7	A
I _{DM} ¹	300us Pulsed Drain Current Tested	T _C =25°C	10	A
I _S ¹	Diode Continuous Forward Current		2	A
E _{AS} ²	Avalanche Energy, Single Plused(L=0.3mH)		25	mJ
T _J	Operating Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 ~ 150	°C

Note: 1: Surface Mounted on 1in² pad area, t ≤ 10sec..2: UIS tested and pluse width limited by maximum junction temperature 150°C (initial temperature T_J=25°C).**Electrical Characteristics** (T_A=25°C unless otherwise noted)

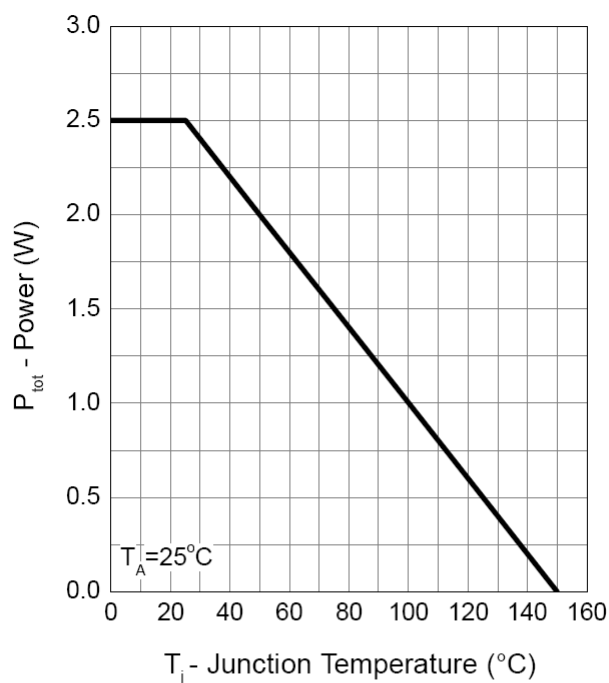
Symbol	Parameter	Test Conditions	Min.	Typ	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	100			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =80V, V _{GS} =0V T _J =85°C			1 30	uA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1	2	3	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V			±10	uA
R _{DS(on)} ¹	Drain-Source On-Resistance	V _{GS} =10V, I _D =3.5A V _{GS} =4.5V, I _D =2A		140 185	180 240	mΩ
Diode Characteristics						
V _{SD} ¹	Diode Forward Voltage	I _{SD} =2A, V _{GS} =0V		0.8	1.1	V
t _{rr}	Reverse Recovery Time	I _{SD} =2A,		43		ns
Q _{rr}	Reverse Recovery Charge	dI _{SD} /dt=100A/us		73		nC
Dynamic Characteristics ²						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =30V Frequency=1MHz		440		pF
C _{oss}	Output Capacitance			36		
C _{rss}	Reverse Transfer Capacitance			20		
t _{d(on)}	Turn-On Delay Time	V _{DD} =30V, R _L =30Ω I _D =1A, V _{GEN} =10V R _G =6Ω		11	21	ns
t _r	Turn-On Rise Time			10	19	
t _{d(off)}	Turn-Off Delay Time			24	44	
t _f	Turn-Off Fall Time			21	39	
Gate Charge Characteristics ²						
Q _g	Total Gate Charge	V _{DS} =50V, V _{GS} =10V I _D =2A		9.5	13	nC
Q _{gs}	Gate-Source Charge			1.9		
Q _{gd}	Gate-Drain Charge			2.1		

Note: 1: Pulse test ; pulse width ≤ 300ns, duty cycle ≤ 2%.

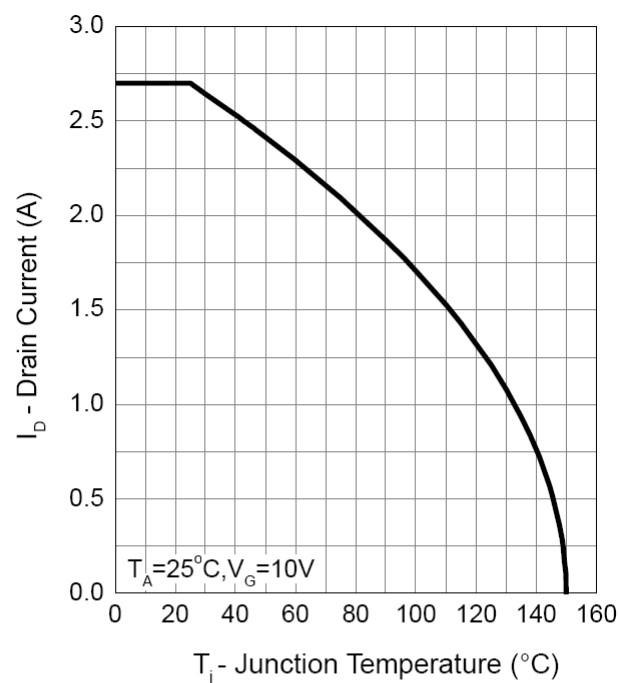
2: Guaranteed by design, not subject to production testing.

Typical Characteristics

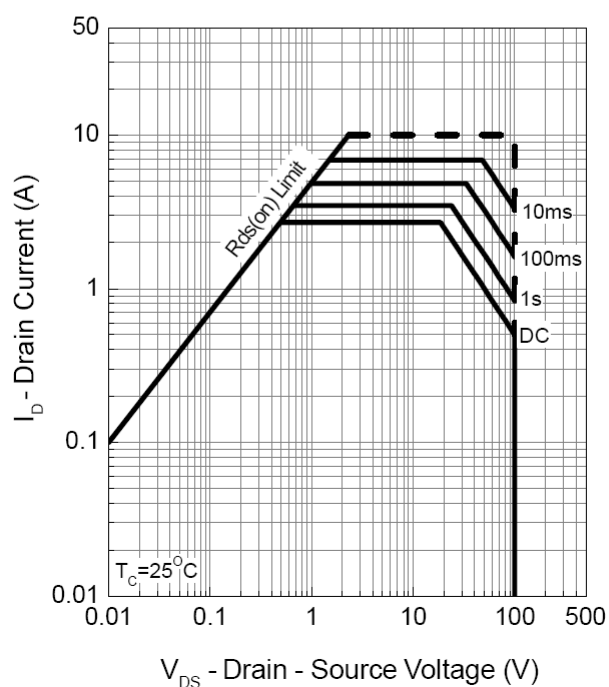
Power Dissipation



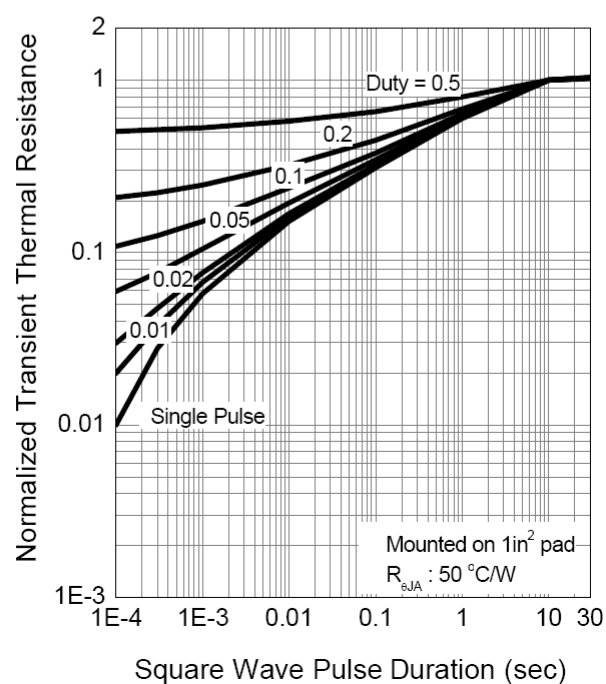
Drain Current



Safe Operation Area

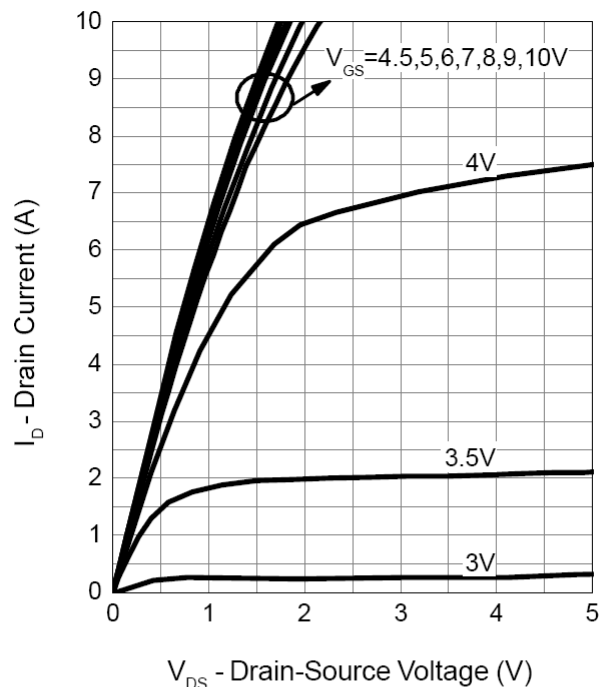


Thermal Transient Impedance

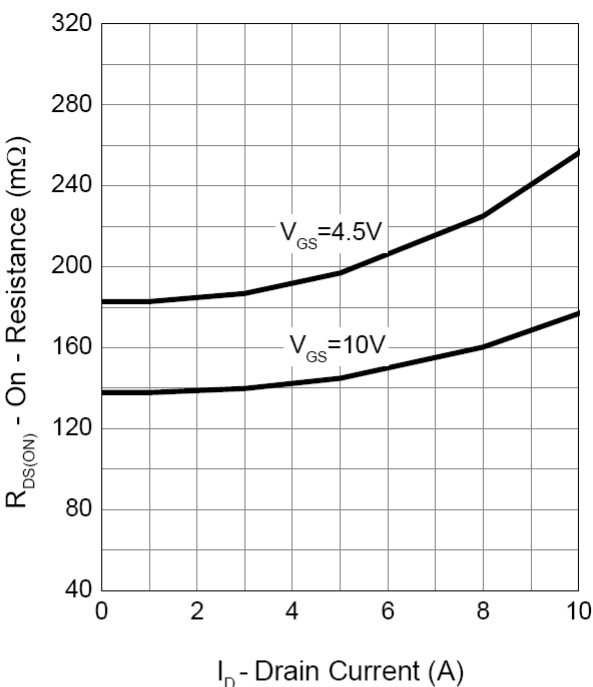


Typical Characteristics (Cont.)

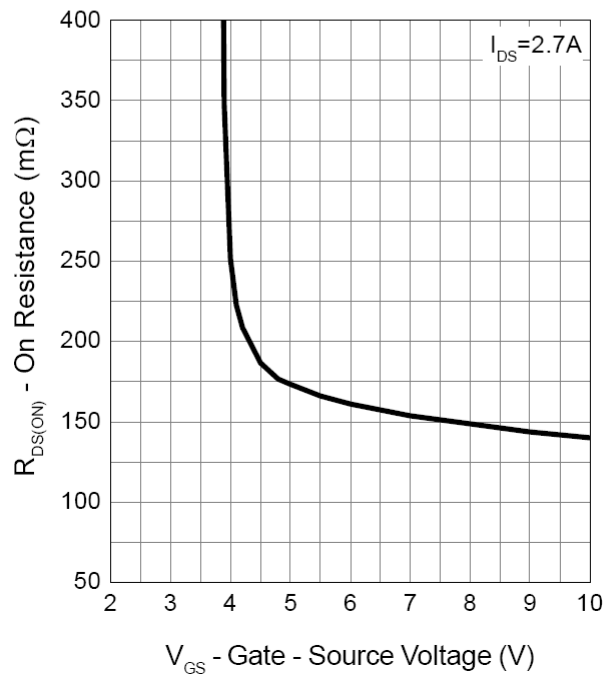
Output Characteristics



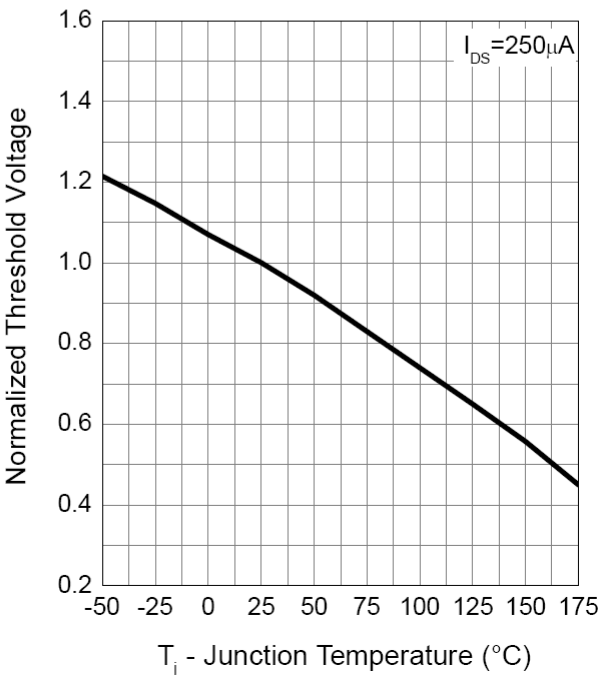
Drain-Source On Resistance



Gate-Source On Resistance

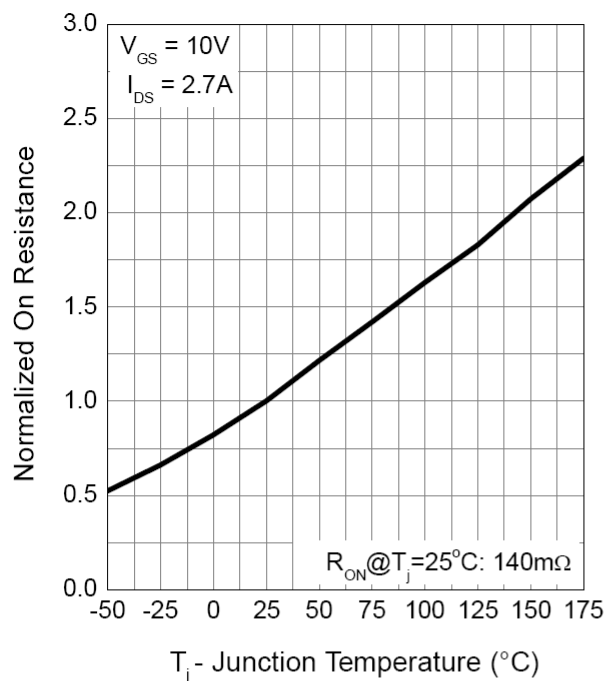


Gate Threshold Voltage

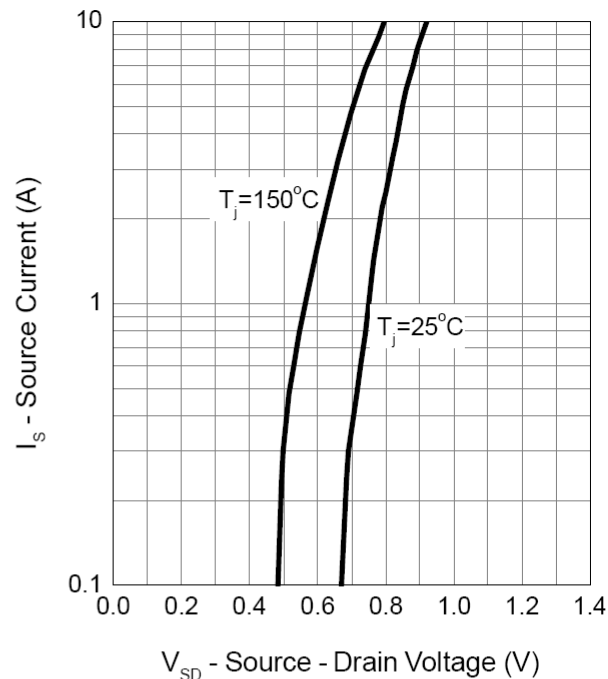


Typical Characteristics (Cont.)

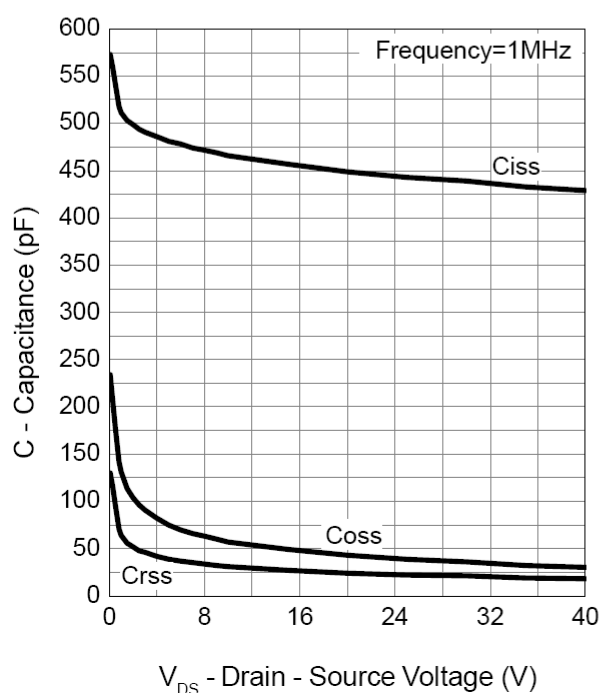
Drain-Source On Resistance



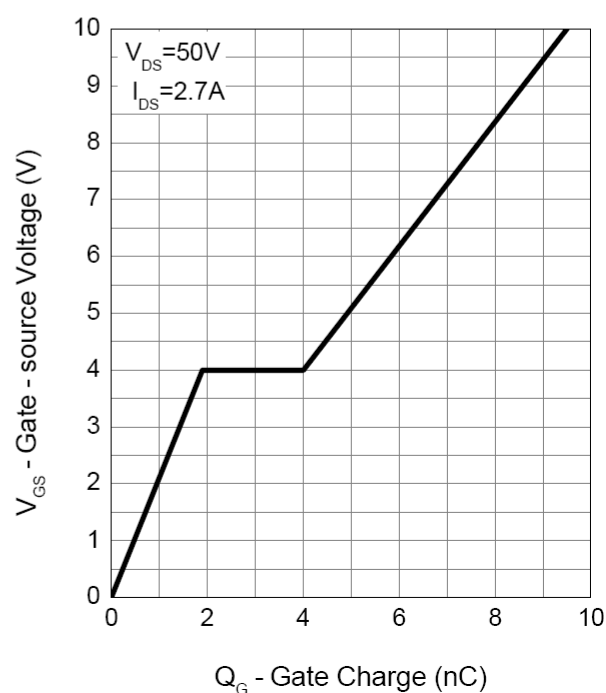
Source-Drain Diode Forward



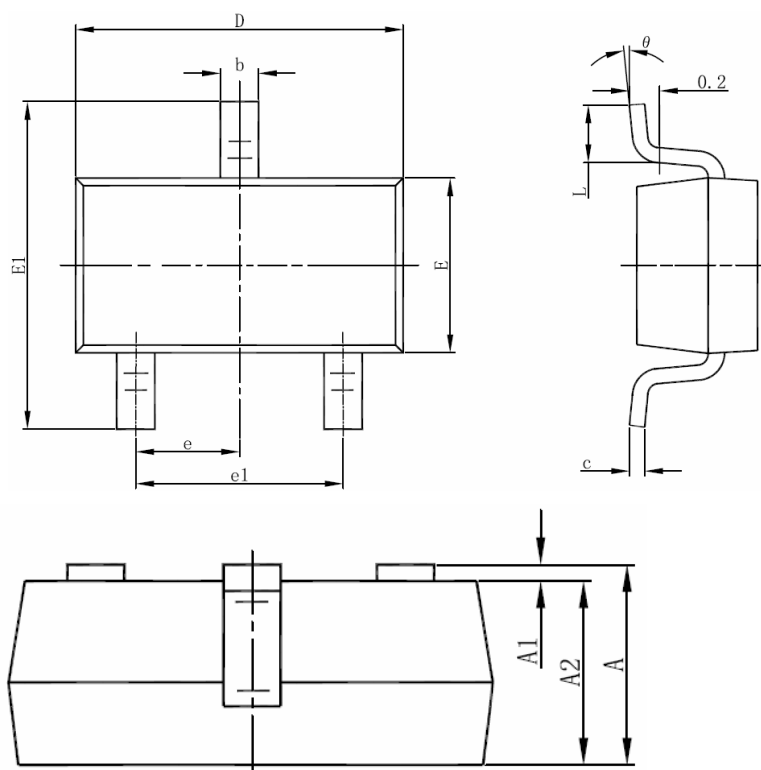
Capacitance



Gate Charge



SOT-23-3L PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

NOTES

1. All dimensions are in millimeters.
2. Tolerance ±0.10mm (4 mil) unless otherwise specified
3. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 5 mils.
4. Dimension L is measured in gauge plane.
5. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.