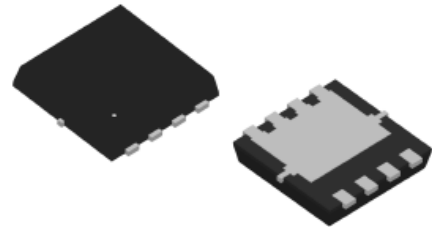


WNM3034

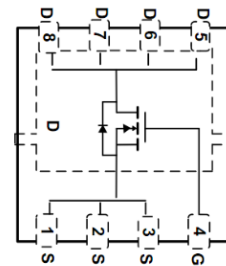
SingleN-Channel, 30V, 19A, Power MOSFET

[Http://www.sh-willsemi.com](http://www.sh-willsemi.com)

V _{DS} (V)	Typical R _{DS(on)} (mΩ)
30	12 @ V _{GS} =10V
	16 @ V _{GS} =4.5V



PDFN3X3-8L

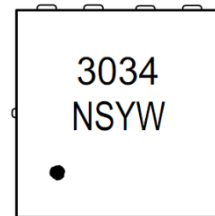


The WNM3034 is N-Channel enhancement MOS Field Effect Transistor. Uses advanced trench technology and design to provide excellent R_{DS(ON)} with low gate charge. This device is suitable for use in DC-DC conversion, power switch and charging circuit. Standard Product WNM3034 is Pb-free.

Features

- Trench Technology
- Super high density cell design
- Excellent ON resistance
- Extremely Low Threshold Voltage
- Small package PDFN3X3-8L-EP

Pin configuration (Top view)



NS = Device Code
Y = Year
W = Week(A~z)

Applications

- DC/DC converters
- Power supply converters circuit
- Load/Power Switching for portable device

Marking

Order information

Device	Package	Shipping
WNM3034-8/TR	PDFN3*3-8L	3000/Tape&Reel

Absolute Maximum ratings

Parameter	Symbol	Maximum	Unit	
Drain-Source Voltage	V_{DS}	30	V	
Gate-Source Voltage	V_{GS}	± 20		
Continuous Drain Current ^d	I_D	$T_C=25^{\circ}\text{C}$	19	A
		$T_C=70^{\circ}\text{C}$	18	A
Pulsed Drain Current ^c	I_{DM}	56	A	
Continuous Drain Current	I_{DSM}	$T_A=25^{\circ}\text{C}$	12	A
		$T_A=70^{\circ}\text{C}$	9	
Avalanche Energy $L=0.3\text{mH}$	E_{AS}	12	mJ	
Power Dissipation ^b	P_D	$T_C=25^{\circ}\text{C}$	13	W
		$T_C=70^{\circ}\text{C}$	8.3	
Power Dissipation ^a	P_{DSM}	$T_A=25^{\circ}\text{C}$	3.6	W
		$T_A=70^{\circ}\text{C}$	2.3	
Operating Junction Temperature	T_J	-55 to 150	$^{\circ}\text{C}$	
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}\text{C}$	

Thermal resistance ratings

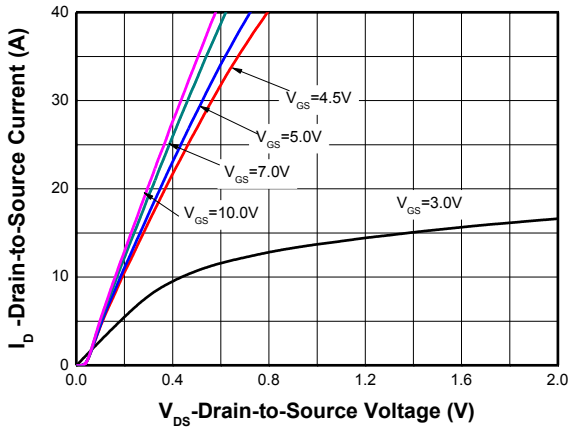
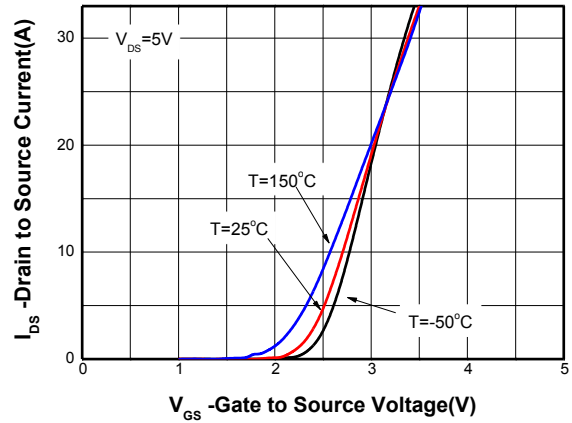
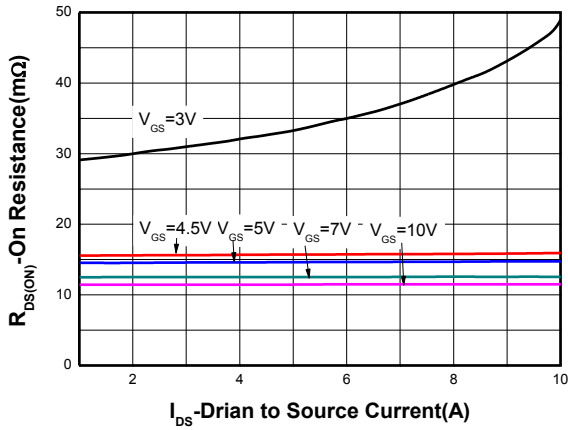
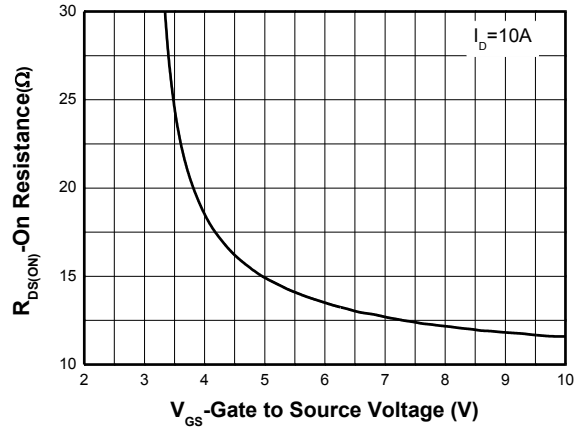
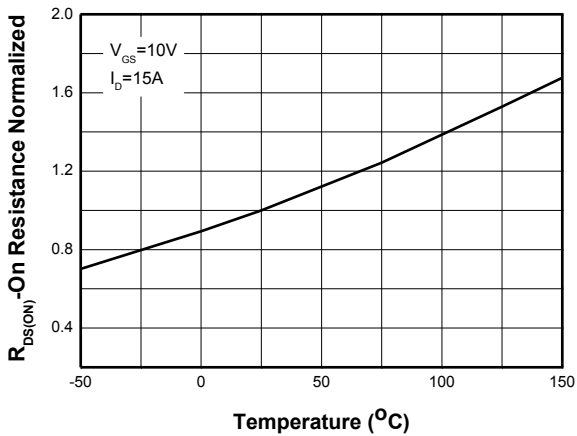
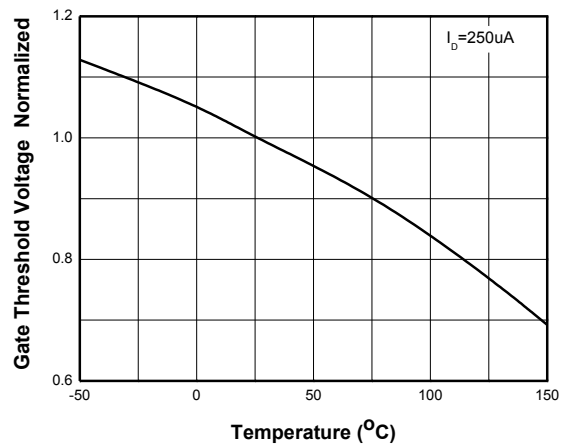
Single Operation					
Parameter		Symbol	Typical	Maximum	Unit
Junction-to-Ambient Thermal Resistance ^a	$t \leq 10\text{ s}$	$R_{\theta JA}$	28	35	$^{\circ}\text{C/W}$
	Steady State		53	67	
Junction-to-Case Thermal Resistance	Steady State	$R_{\theta JC}$	8	9.6	

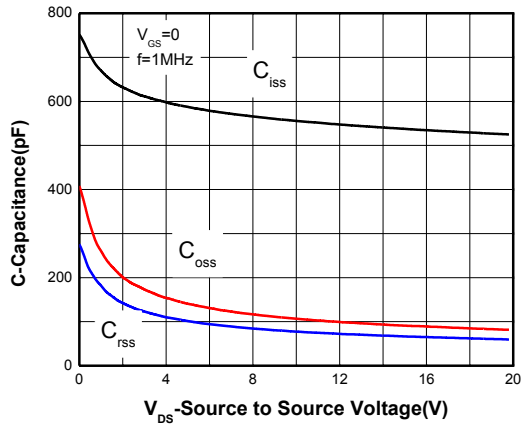
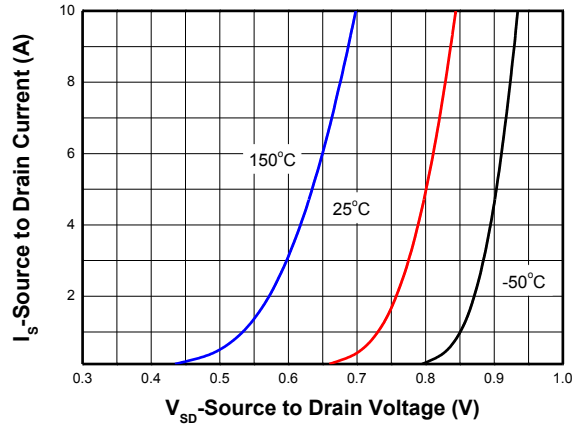
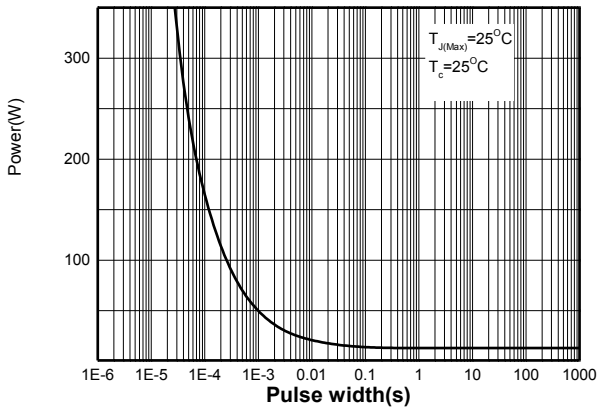
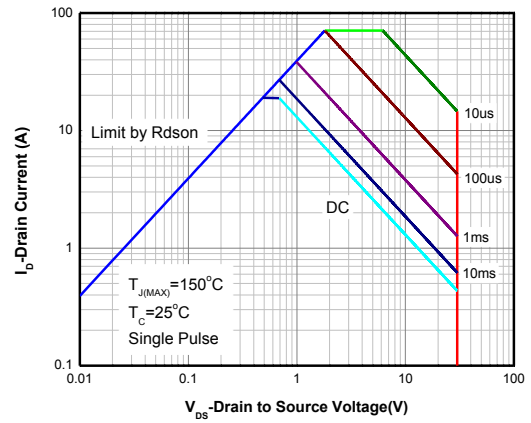
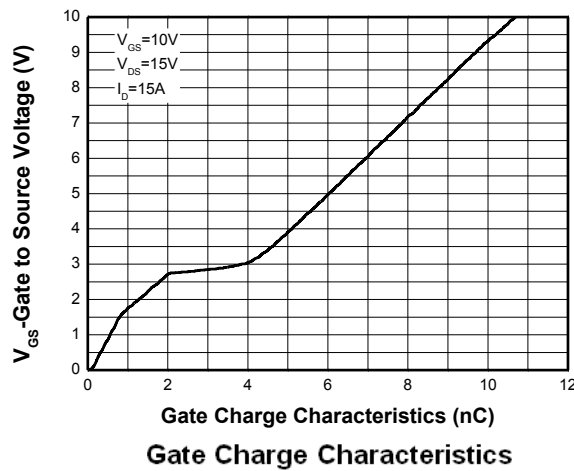
Note:

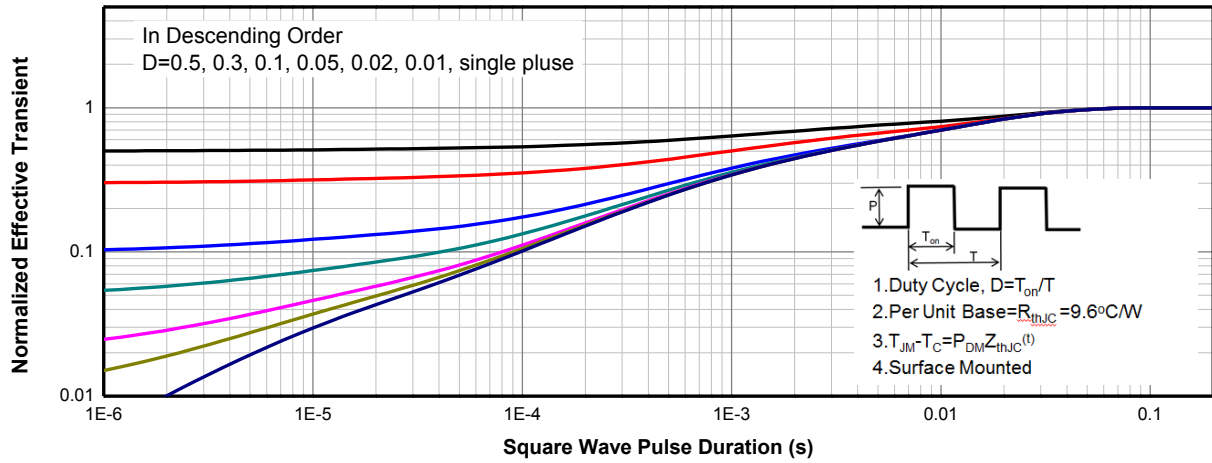
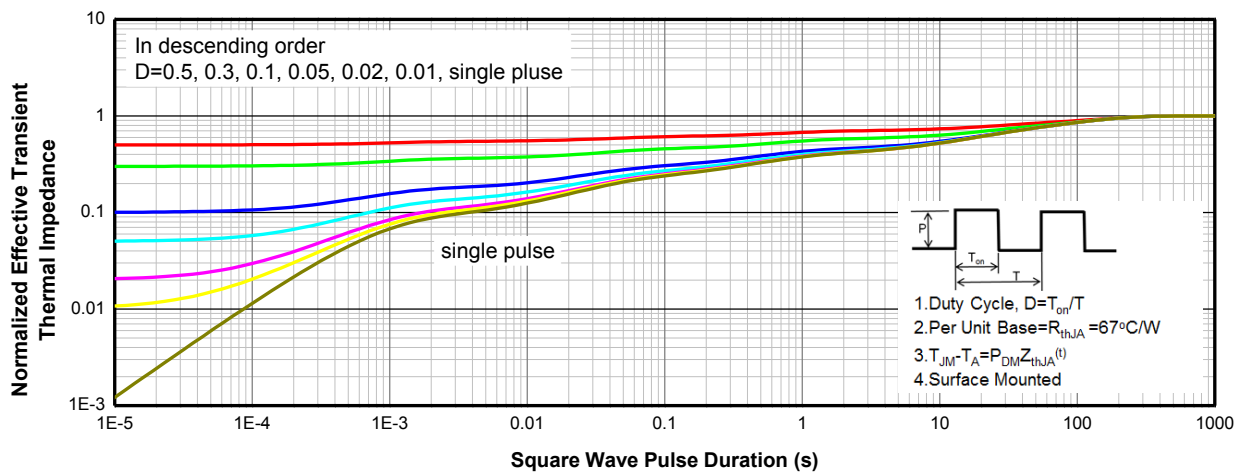
- a The value of $R_{\theta JA}$ is measured with the device mounted on 1-inch² (6.45cm²) with 2oz.(0.071mm thick) Copper pad on a 1.5*1.5 inch², 0.06-inch thick FR4 PCB, in a still air environment with $T_A = 25^{\circ}\text{C}$. The power dissipation P_{DSM} is based on $R_{\theta JA} t \leq 10\text{s}$ value and the $T_{J(MAX)}=150^{\circ}\text{C}$. The value in any given application is determined by the user's specific board design.
- b The power dissipation P_D is based on $T_{J(MAX)}=150^{\circ}\text{C}$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.
- c Repetitive rating, ~10us pulse width, duty cycle ~1%, keep initial $T_J = 25^{\circ}\text{C}$, the maximum allowed junction temperature of 150 $^{\circ}\text{C}$.
- d The maximum current rating by source bonding technology.
- e The static characteristics are obtained using ~380us pulses, duty cycle ~1%.
- f Guaranteed by design.

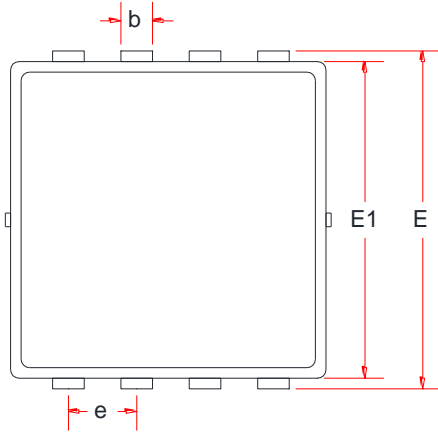
Electronics Characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-to-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0\text{ V}, I_D = 250\mu\text{A}$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24\text{V}, V_{GS} = 0\text{V}$			1	μA
Gate-to-source Leakage Current	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{V}$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS} = V_{DS}, I_D = 250\mu\text{A}$	1.2	1.7	2.5	V
Drain-to-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10\text{V}, I_D = 10\text{A}$		12	15	m Ω
		$V_{GS} = 4.5\text{V}, I_D = 8\text{A}$		16	23	
CHARGES, CAPACITANCES AND GATE RESISTANCE						
Input Capacitance	C_{ISS}	$V_{GS} = 0\text{ V}, f = 1.0\text{MHz}, V_{DS} = 15\text{ V}$		540		pF
Output Capacitance	C_{OSS}			95		
Reverse Transfer Capacitance	C_{RSS}			68		
Total Gate Charge ^f	$Q_G (10\text{V})$	$V_{GS} = 10\text{ V}, V_{DS} = 15\text{ V}, I_D = 10\text{ A}$		10.6	19.1	nC
	$Q_G (4.5\text{V})$			5.5	10.0	
Threshold Gate Charge	$Q_{G(TH)}$			1		
Gate-to-Source Charge	Q_{GS}			1.9		
Gate-to-Drain Charge	Q_{GD}			2.1		
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_d(ON)$	$V_{GS} = 10\text{ V}, V_{DS} = 15\text{ V}, R_L = 1\ \Omega, R_G = 3\ \Omega$		4		ns
Rise Time	t_r			17		
Turn-Off Delay Time	$t_d(OFF)$			18		
Fall Time	t_f			9		
BODY DIODE CHARACTERISTICS						
Forward Voltage	V_{SD}	$V_{GS} = 0\text{ V}, I_S = 1\text{ A}$		0.7	1	V

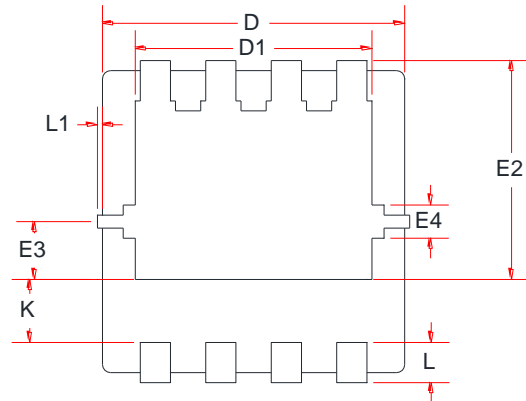
Typical Characteristics (Ta=25°C, unless otherwise noted)

Output Characteristics ^e

Transfer Characteristics ^e

On-Resistance vs. Drain Current ^e

On-Resistance vs. Gate-to-Source Voltage ^e

On-Resistance vs. Junction Temperature ^e

Threshold voltage vs. Temperature


Capacitance

Body Diode Forward Voltage^e

Single pulse power

Safe operating power

Gate Charge Characteristics

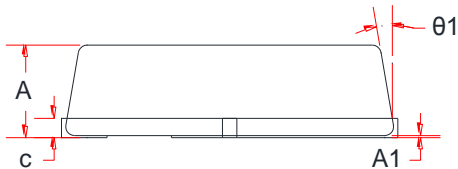
Transient Thermal Response (Junction-to-Case)

Transient Thermal Response (Junction-to-Ambient)


PACKAGE OUTLINE DIMENSIONS
PDFN3x3-8L


TOP VIEW

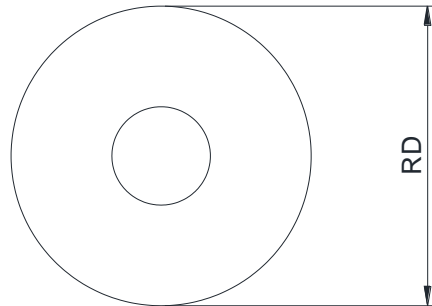
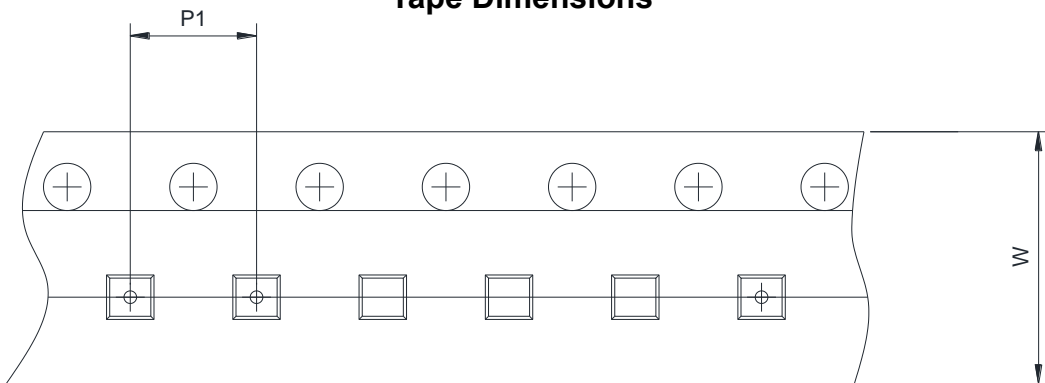
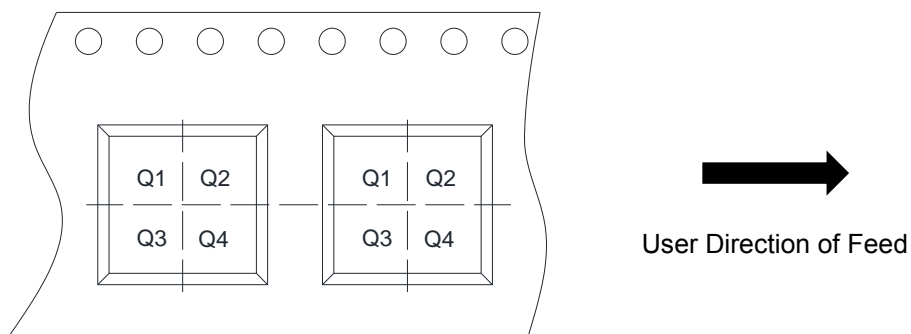


BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.70	0.80	0.90
A1	0.00	-	0.05
c	0.10	0.15	0.25
b	0.24	0.30	0.35
D	3.00 BSC		
D1	2.25	2.35	2.45
E	3.20 BSC		
E1	3.00 BSC		
E2	2.02	2.18	2.33
E3	0.48	0.58	0.68
E4	0.33 BSC		
e	0.65 BSC		
K	0.47	0.63	0.78
L	0.30	0.40	0.50
L1	0	-	0.10
θ	0 °	10 °	12 °

TAPE AND REEL INFORMATION
Reel Dimensions

Tape Dimensions

Quadrant Assignments For PIN1 Orientation In Tape


RD	Reel Dimension	<input type="checkbox"/> 7inch	<input checked="" type="checkbox"/> 13inch
W	Overall width of the carrier tape	<input type="checkbox"/> 8mm	<input checked="" type="checkbox"/> 12mm <input type="checkbox"/> 16mm
P1	Pitch between successive cavity centers	<input type="checkbox"/> 2mm	<input type="checkbox"/> 4mm <input checked="" type="checkbox"/> 8mm
Pin1	Pin1 Quadrant	<input checked="" type="checkbox"/> Q1	<input type="checkbox"/> Q2 <input type="checkbox"/> Q3 <input type="checkbox"/> Q4