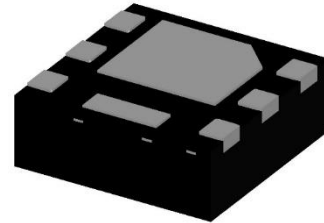


WNM3056

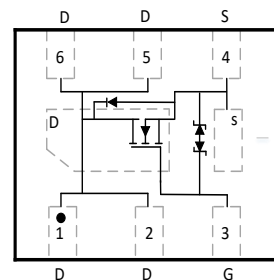
Single N-Channel, 30V, 11.6A, Power MOSFET

<http://www.omnivision-group.com>

V _{DS} (V)	Max R _{DS(on)} (mΩ)
30	14@V _{GS} =4.5V
	15@V _{GS} =3.7V
	20@V _{GS} =2.5V
	24@V _{GS} =1.8V
ESD Rating:2000V HBM	



DFN2X2-6L



Pin configuration (Top view)

Description

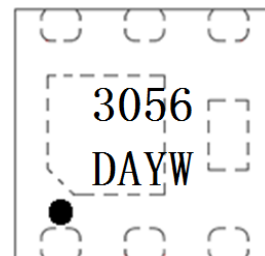
The WNM3056 is Single N-Channel enhancement MOS Field Effect Transistor. Uses advanced trench technology and design to provide excellent R_{DS(ON)} with low gate charge. This device is suitable for use in DC-DC conversion, power switch and charging circuit. Standard Product WNM3056 is Pb-free.

Features

- Trench Technology
- Supper high density cell design
- Excellent ON resistance
- Extremely Low Threshold Voltage
- Small package DFN2X2-6L

Applications

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



3056 = Device Code
 DA = Special Code
 Y = Year
 W = Week(A~Z)

Marking

Order information

Device	Package	Shipping
WNM3056-6/TR	DFN2x2-6L	3000/Tape&Reel

Absolute Maximum ratings

Parameter	Symbol	Maximum	Unit	
Drain-Source Voltage	V_{DS}	30	V	
Gate-Source Voltage	V_{GS}	± 10		
Continuous Drain Current	I_D	$T_A=25^\circ\text{C}$	11.6	A
		$T_A=70^\circ\text{C}$	9.3	
Pulsed Drain Current ^c	I_{DM}	35		
Power Dissipation ^b	P_D	$T_A=25^\circ\text{C}$	3.4	W
		$T_A=70^\circ\text{C}$	2.2	
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

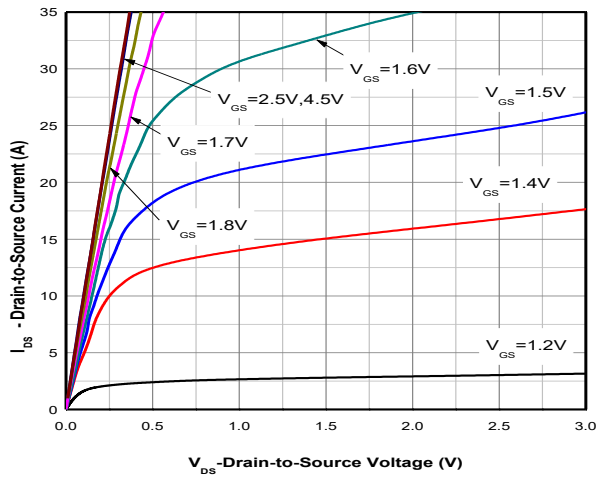
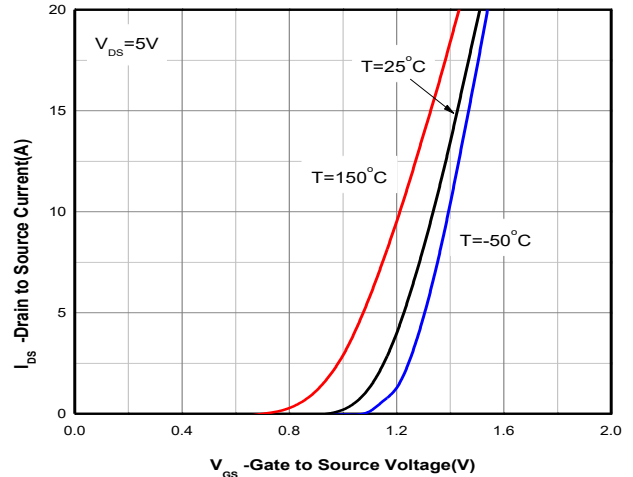
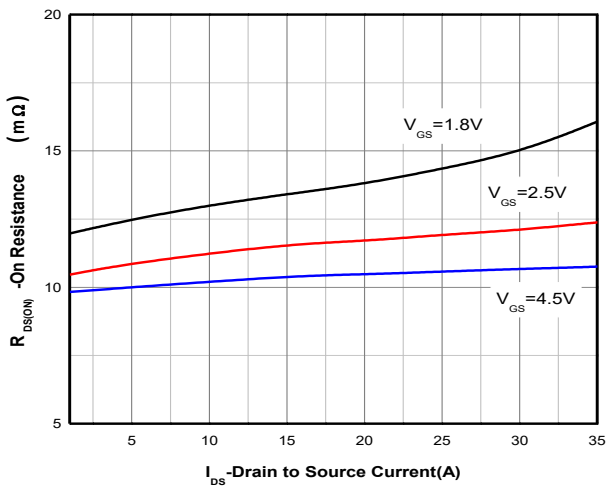
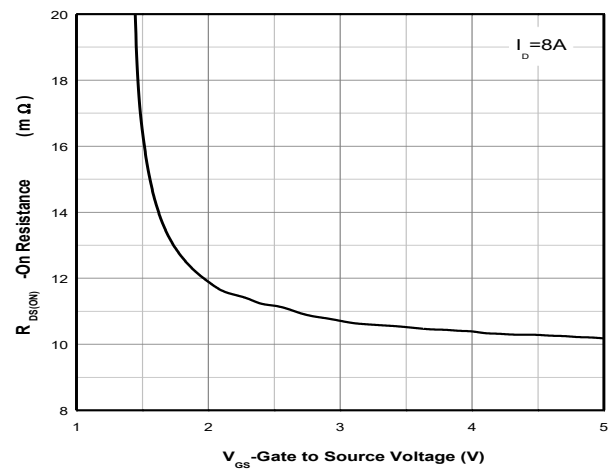
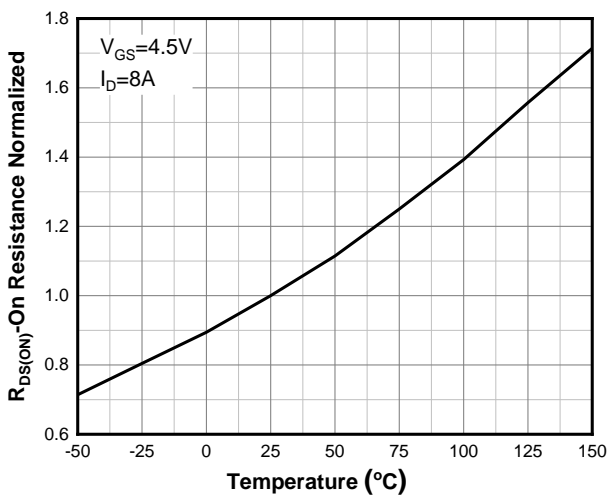
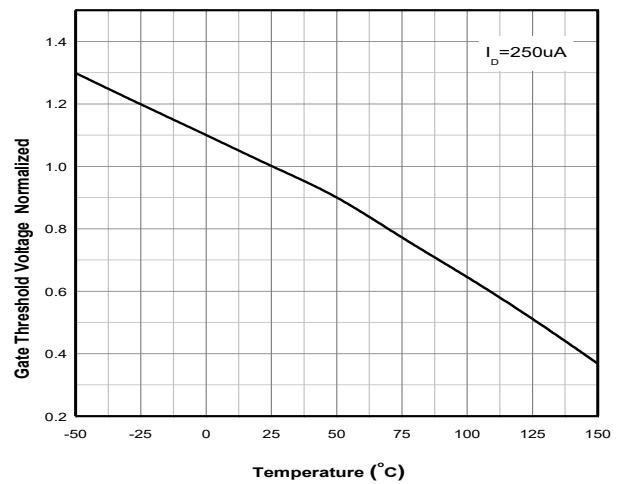
Single Operation					
Parameter	Symbol	Typical	Maximum	Unit	
Junction-to-Ambient Thermal Resistance ^a	$R_{\theta JA}$	30	37	$t \leq 10 \text{ s}$	$^\circ\text{C/W}$
				Steady State	
Junction-to-Case Thermal Resistance	$R_{\theta JC}$	5.5	6.5	Steady State	

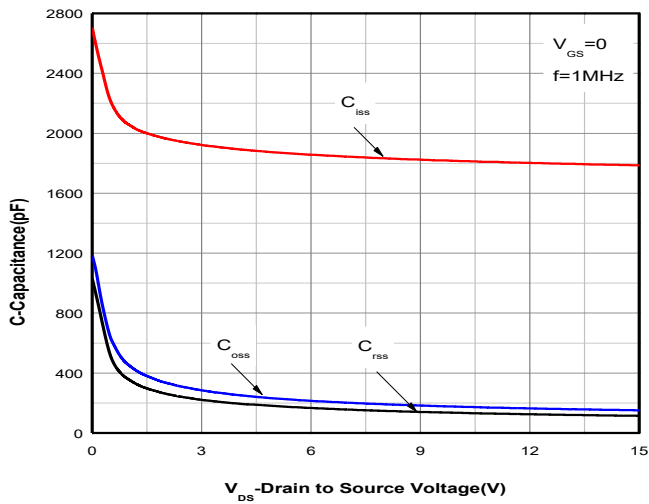
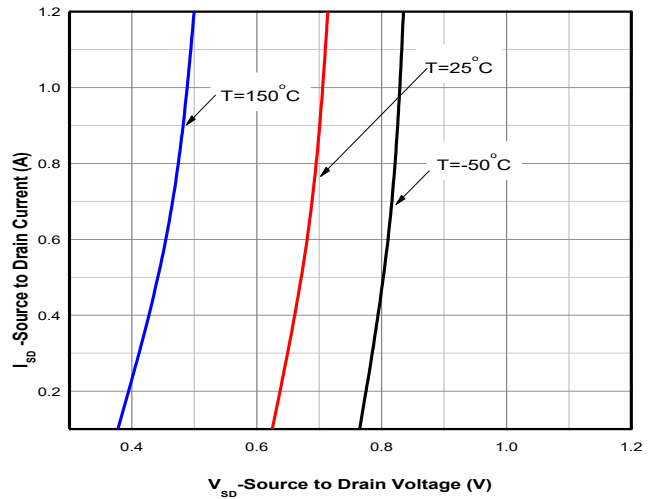
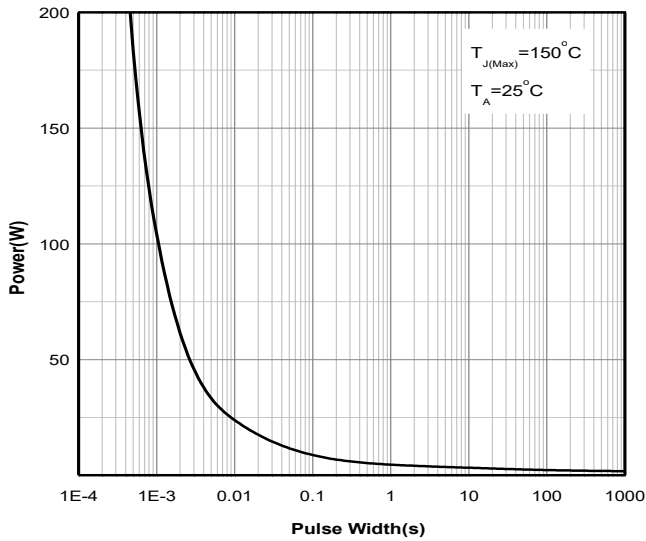
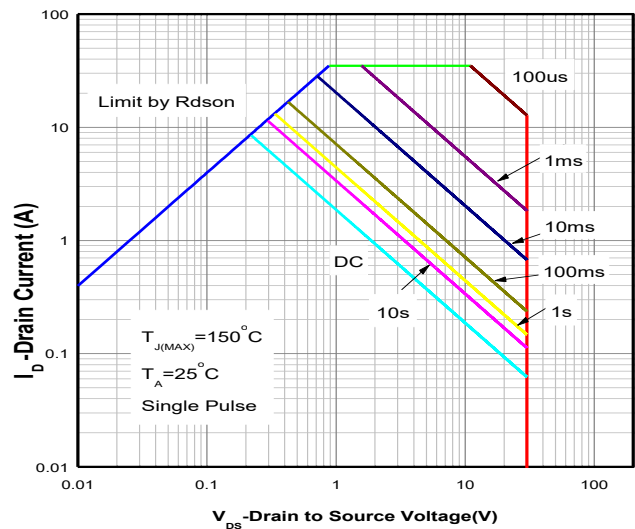
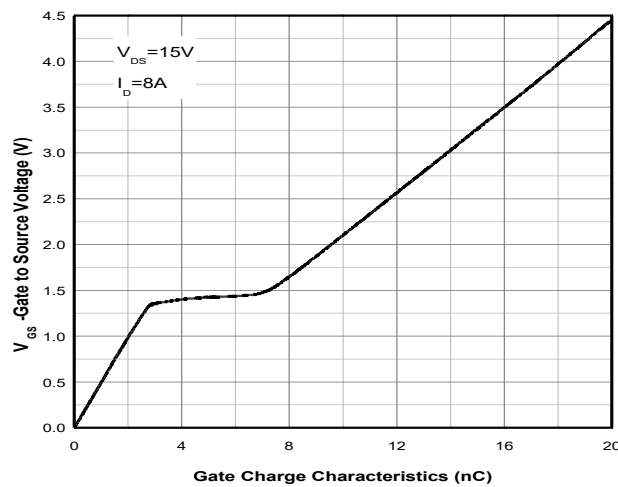
Note:

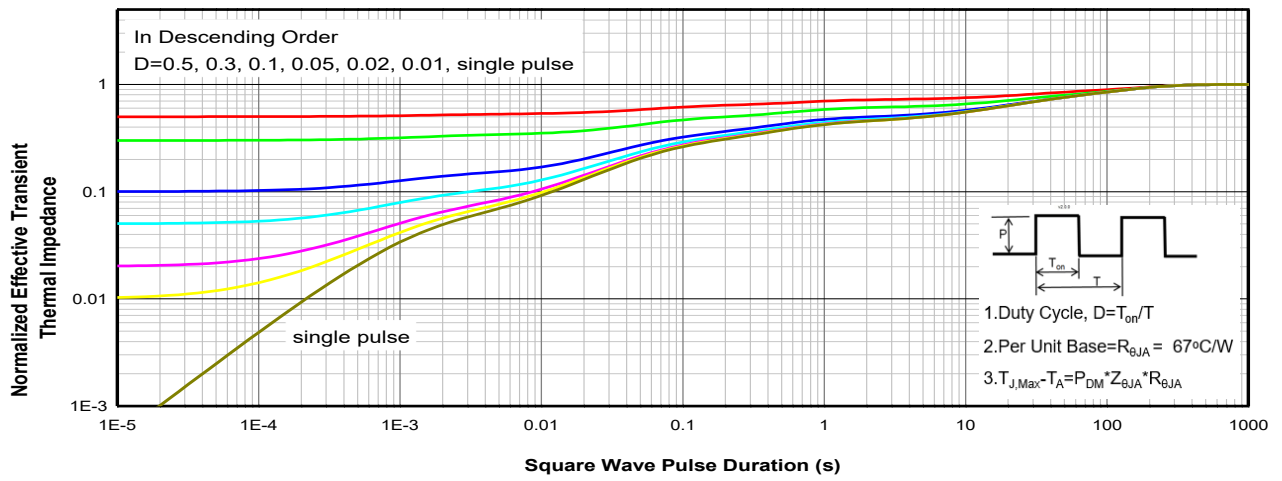
- FR-4 board (38mm X 38mm X t1.6mm, 70um Copper) partially covered with copper (645mm² area)
- The power dissipation P_D is based on Junction-to-Ambient thermal resistance $R_{\theta JA}$ $t \leq 10\text{s}$ value and the $T_{J(\text{MAX})}=150^\circ\text{C}$.
- Repetitive rating, ~10us pulse width, duty cycle ~1%, keep initial $T_J=25^\circ\text{C}$, the maximum allowed junction temperature of 150°C .
- The static characteristics are obtained using ~380us pulses, duty cycle ~1%.

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

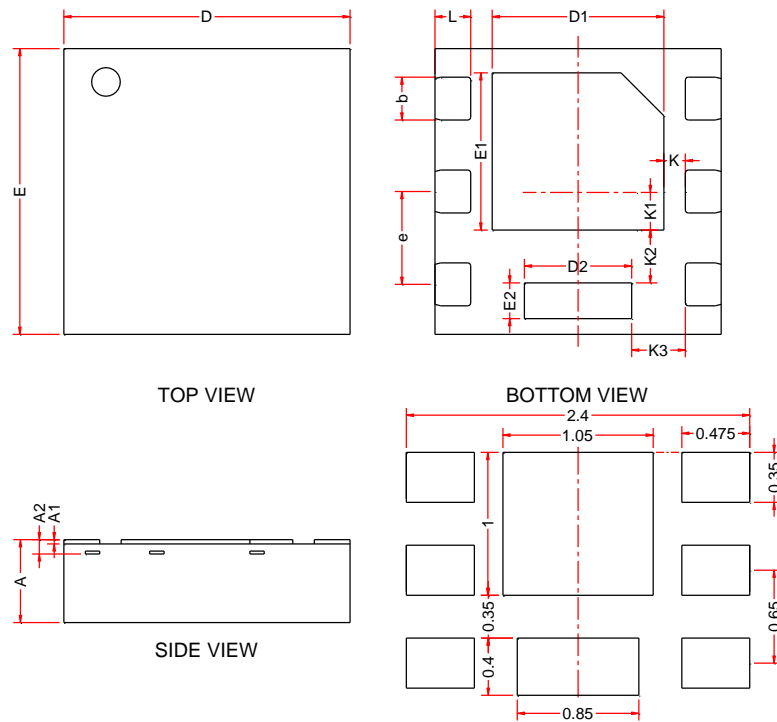
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-to-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0\text{ V}, I_D = 250\mu\text{A}$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}$			1	μA
Gate-to-source Leakage Current	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 10\text{ V}$			± 10	μA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS} = V_{DS}, I_D = 250\mu\text{A}$	0.45	0.75	1.0	V
Drain-to-source On-resistance	$R_{DS(on)}$	$V_{GS} = 4.5\text{ V}, I_D = 8.0\text{ A}$		10.8	14	m Ω
		$V_{GS} = 3.7\text{ V}, I_D = 8.0\text{ A}$		11	15	
		$V_{GS} = 2.5\text{ V}, I_D = 7.2\text{ A}$		12	20	
		$V_{GS} = 1.8\text{ V}, I_D = 3.7\text{ A}$		13.5	24	
CHARGES, CAPACITANCES AND GATE RESISTANCE						
Input Capacitance	C_{ISS}	$V_{GS} = 0\text{ V}, F = 1\text{ MHz}, V_{DS} = 15\text{ V}$		1786		pF
Output Capacitance	C_{OSS}			151		
Reverse Transfer Capacitance	C_{RSS}			114		
Total Gate Charge	$Q_{G(TOT)}$	$V_{GS} = 4.5\text{ V}, V_{DS} = 15\text{ V}, I_D = 8\text{ A}$		20		nC
Threshold Gate Charge	$Q_{G(TH)}$			1.5		
Gate-to-Source Charge	Q_{GS}			2.6		
Gate-to-Drain Charge	Q_{GD}			4.4		
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_d(ON)$	$V_{GS} = 4.5\text{ V}, V_{DS} = 15\text{ V}, I_D = 8\text{ A}, R_G = 6\Omega$		14		ns
Rise Time	t_r			54		
Turn-Off Delay Time	$t_d(OFF)$			80		
Fall Time	t_f			65		
BODY DIODE CHARACTERISTICS						
Forward Voltage	V_{SD}	$V_{GS} = 0\text{ V}, I_S = 1\text{ A}$		0.7	1.2	V

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

Output characteristics^d

Transfer Characteristics^d

On-Resistance vs. Drain current^d

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

On-Resistance vs. Junction Temperature^d

Threshold Voltage vs. Temperature


Capacitance

Body Diode Forward Voltage ^d

Single pulse power

Safe operating power

Gate Charge Characteristics

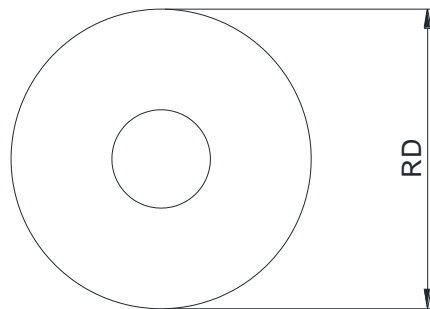
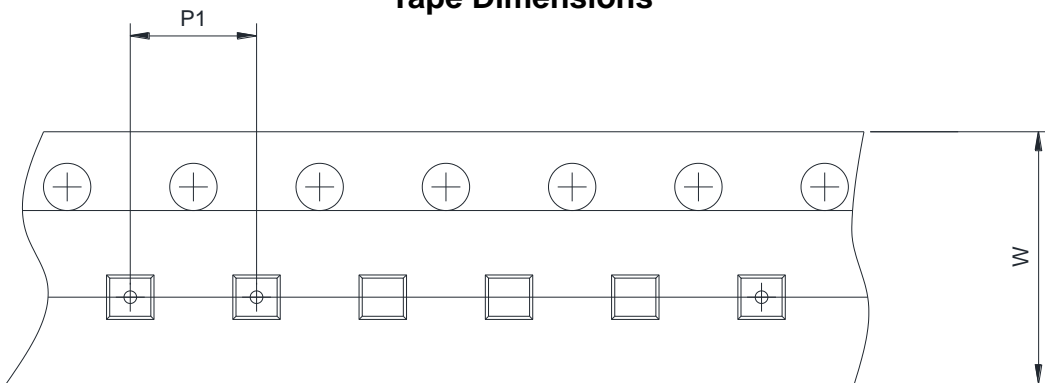
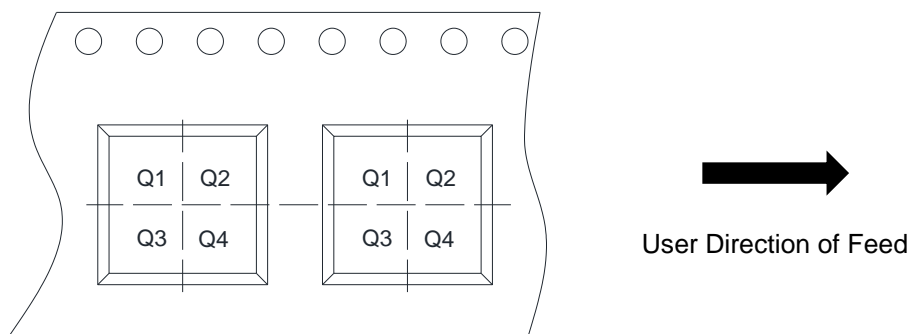


Transient Thermal Response (Junction-to-Ambient)

PACKAGE OUTLINE DIMENSIONS
DFN2x2-6L


RECOMMENDED LAND PATTERN(unit:mm)

Symbol	Dimensions in Millimeters		
	Min.	Nom	Max.
A	0.50	---	0.65
A1	0.00	0.02	0.05
A2	0.10REF		
b	0.25	0.30	0.35
D	1.90	2.00	2.10
D1	1.10	1.20	1.30
D2	0.65	0.75	0.85
E	1.90	2.00	2.10
E1	1.00	1.10	1.20
E2	0.15	0.25	0.35
e	0.65BSC		
L	0.20	0.25	0.30
K	0.05	0.15	0.25
K1	0.17	0.27	0.37
K2	0.27	0.37	0.47
K3	0.28	0.38	0.48

TAPE AND REEL INFORMATION
Reel Dimensions

Tape Dimensions

Quadrant Assignments For PIN1 Orientation In Tape


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

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [Will Semiconductor](#) manufacturer:

Other Similar products are found below :

[IRFD120](#) [JANTX2N5237](#) [2SK2267\(Q\)](#) [BUK455-60A/B](#) [TK100A10N1,S4X\(S](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#)
[IRS2092STRPBF-EL](#) [IPS70R2K0CEAKMA1](#) [TK31J60W5,S1VQ\(O](#) [TK31J60W,S1VQ\(O](#) [TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#)
[DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [P85W28HP2F-7071](#) [DMN1053UCP4-7](#) [NTE2384](#) [DMC2700UDMQ-7](#) [DMN2080UCB4-7](#)
[DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [IPS60R3K4CEAKMA1](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [IPS60R360PFD7SAKMA1](#)
[DMN2990UFB-7B](#) [SSM3K35CT,L3F](#) [IPLK60R1K0PFD7ATMA1](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [IPWS65R035CFD7AXKSA1](#)
[MCQ7328-TP](#) [SSM3J143TU,LXHF](#) [DMN12M3UCA6-7](#) [PJMF280N65E1_T0_00201](#) [PJMF380N65E1_T0_00201](#)
[PJMF280N60E1_T0_00201](#) [PJMF600N65E1_T0_00201](#) [PJMF900N65E1_T0_00201](#)