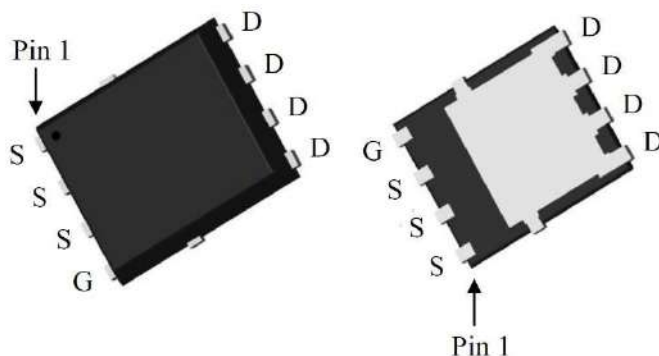


N-Channel Enhancement Mode Power MOSFET

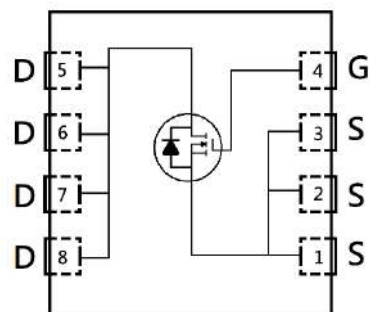
Features:

- Low On Resistance
- Low Gate Charge
- Fast Switching Characteristic

DFN5×6



BV_{DSS}	150V
$I_D@V_{GS}=10V, T_C=25^{\circ}C$	40A
$I_D@V_{GS}=10V, T_A=25^{\circ}C$	9A
$R_{DS(ON)}@V_{GS}=10V, I_D=20A$	11.5m Ω



G : Gate S : Source D : Drain

Ordering Information

Device	Package	Shipping
KPRE011N15R	DFN5×6 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

Absolute Maximum Ratings (T_A=25°C)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		V _{DS}	150	V
Gate-Source Voltage		V _{GS}	±20	
Continuous Drain Current @ V _{GS} =10V, T _C =25°C		I _D	40	A
Continuous Drain Current @ V _{GS} =10V, T _C =100°C			25.3	
Continuous Drain Current @ V _{GS} =10V, T _A =25°C			9	
Continuous Drain Current @ V _{GS} =10V, T _A =70°C			7.3	
Pulsed Drain Current		I _{DM}	160	
Continuous Body Diode Forward Current @ T _C =25°C		I _S	40	
Avalanche Current @ L=0.1mH		I _{AS}	30	mJ
Avalanche Energy @ L=0.5mH		E _{AS}	144	
Total Power Dissipation	T _C =25°C	P _D	52	W
	T _C =100°C		20.8	
	T _A =25°C		2.6	
	T _A =70°C		1.6	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55~+150	°C

Thermal Data

Parameter	Symbol	Steady State	Unit
Thermal Resistance, Junction-to-case	R _{θJC}	2.4	°C/W
Thermal Resistance, Junction-to-ambient	R _{θJA}	48	

Note:

- *a. The power dissipation P_D is based on T_{J(MAX)}=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heatsinking is used.
- *b. The value of R_{θJA} is measured with the device mounted on 1 in² FR -4 board with 2 oz. copper, in a still air environment with T_A=25°C. The power dissipation P_D is based on R_{θJA} and the maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.
- *c. Repetitive rating, pulse width limited by junction temperature T_{J(MAX)}=150°C. Ratings are based on low frequency and low duty cycles to keep initial T_J=25°C.

Characteristics (T_A=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	150	-	-	V	V _{GS} =0V, I _D =250μA
V _{GS(th)}	2	-	4		V _{DS} =V _{GS} , I _D =250μA
G _{FS}	-	29	-	S	V _{DS} =5V, I _D =20A
I _{GSS}	-	-	±100	nA	V _{GS} =±20V, V _{DS} =0V
I _{DSS}	-	-	1	μA	V _{DS} =120V, V _{GS} =0V
R _{DS(ON)}	-	11.5	15	mΩ	V _{GS} =10V, I _D =20A
Dynamic					
C _{iss}	-	3765	-	pF	V _{DS} =75V, V _{GS} =0V, f=1MHz
C _{oss}	-	276	-		
C _{rss}	-	33	-		
R _g	-	1.2	-	Ω	f=1MHz
Q _g *1, 2	-	62	-	nC	V _{DS} =75V, I _D =20A, V _{GS} =10V
Q _{gs} *1, 2	-	19	-		
Q _{gd} *1, 2	-	18	-		
t _{d(ON)} *1, 2	-	33	-	ns	V _{DS} =75V, I _D =20A, V _{GS} =10V, R _{GS} =1Ω
t _r *1, 2	-	24	-		
t _{d(OFF)} *1, 2	-	59	-		
t _f *1, 2	-	15	-		
Source-Drain Diode					
V _{SD} *1	-	0.83	1.2	V	I _S =20A, V _{GS} =0V
t _{rr}	-	77	-	ns	I _F =20A, dI _F /dt=100A/μs
Q _{rr}	-	247	-	nC	

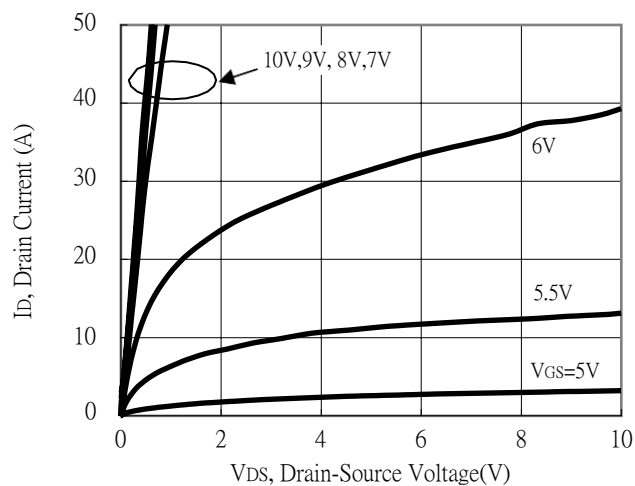
Note:

*1. Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

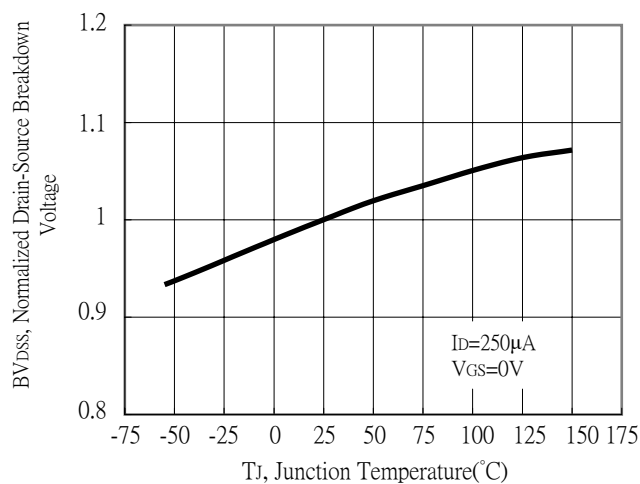
*2. Independent of operating temperature

Typical Characteristics

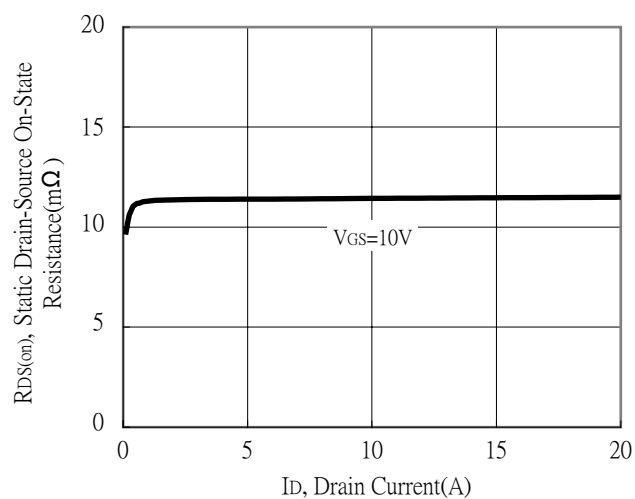
Typical Output Characteristics



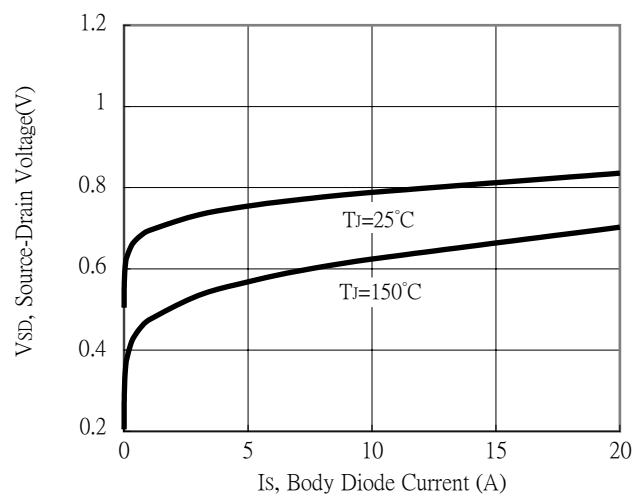
Breakdown Voltage vs Ambient Temperature



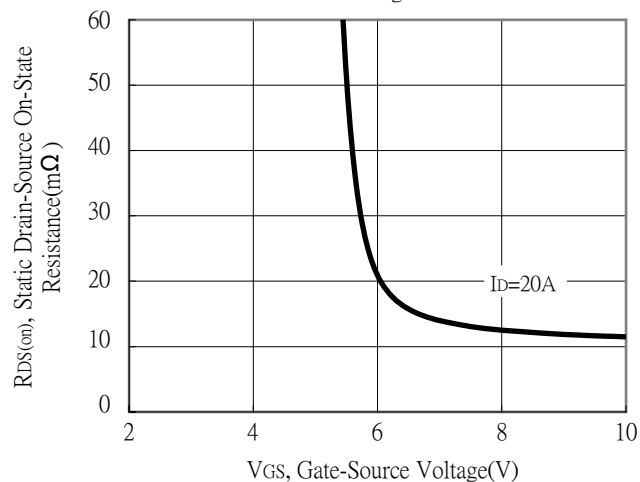
Static Drain-Source On-State resistance vs Drain Current



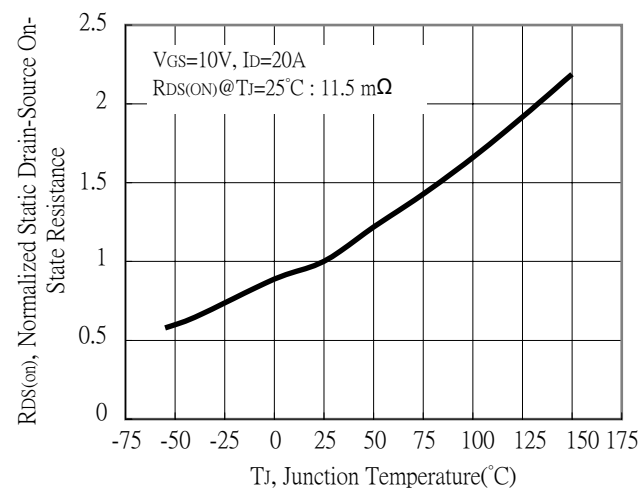
Body Diode Current vs Source-Drain Voltage



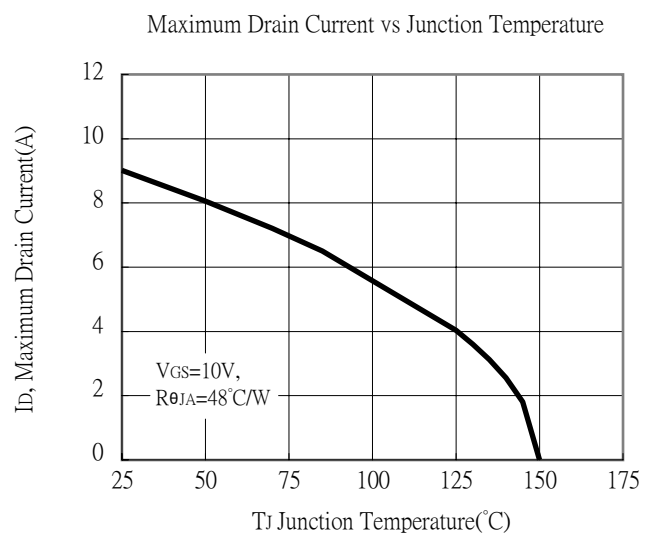
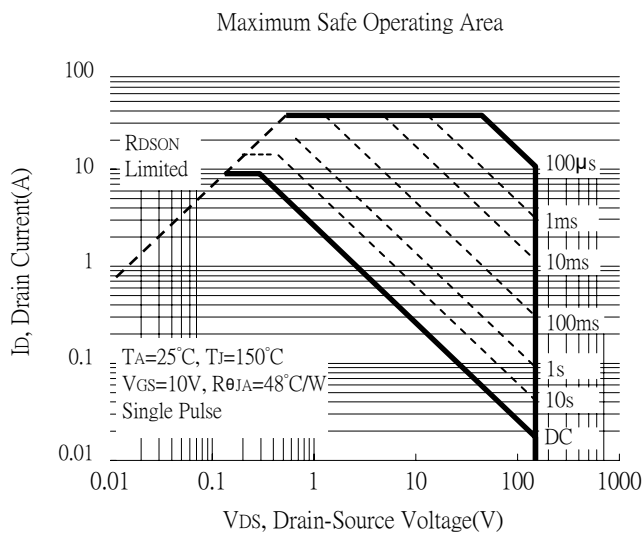
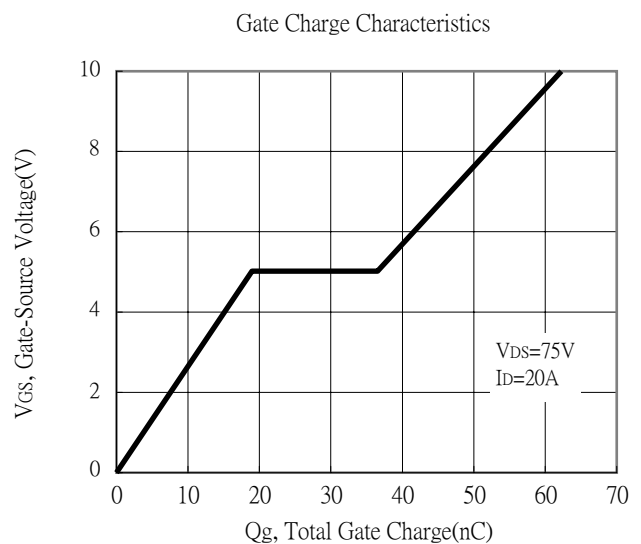
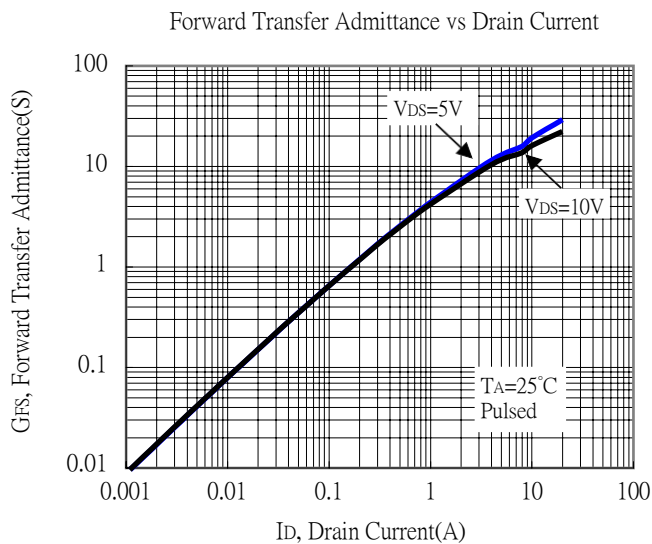
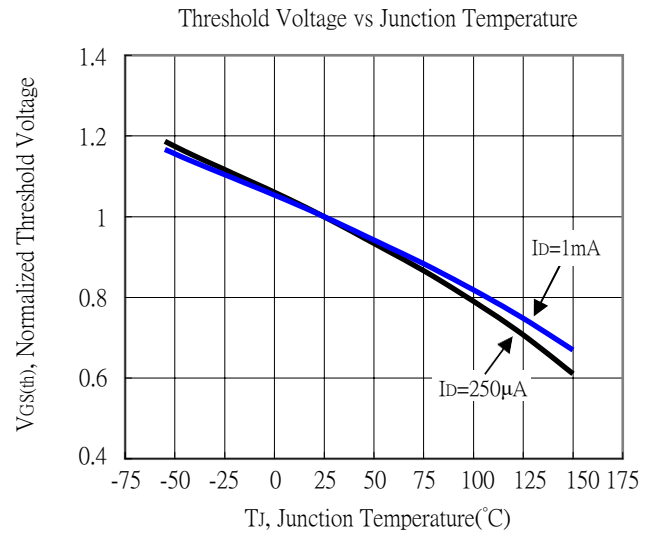
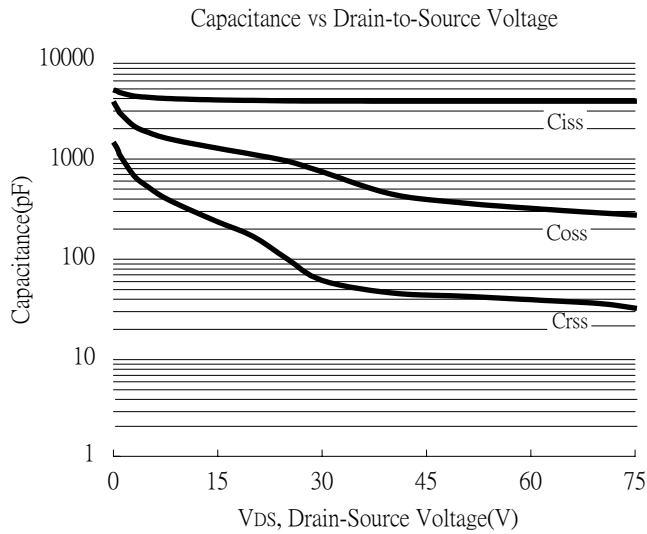
Static Drain-Source On-State Resistance vs Gate-Source Voltage



Drain-Source On-State Resistance vs Junction Temperature

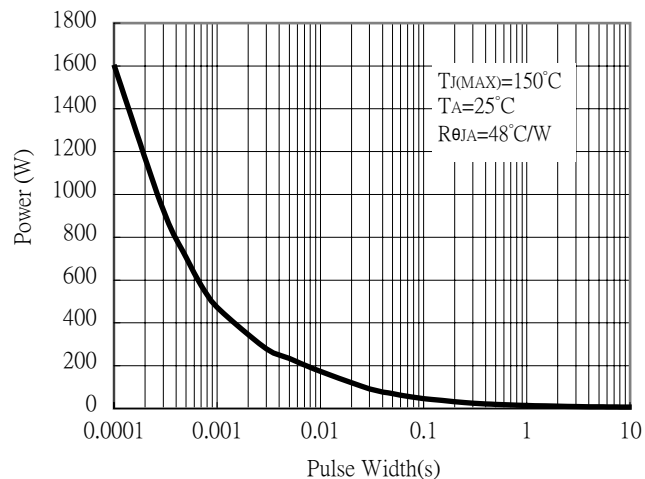


Typical Characteristics (Cont.)

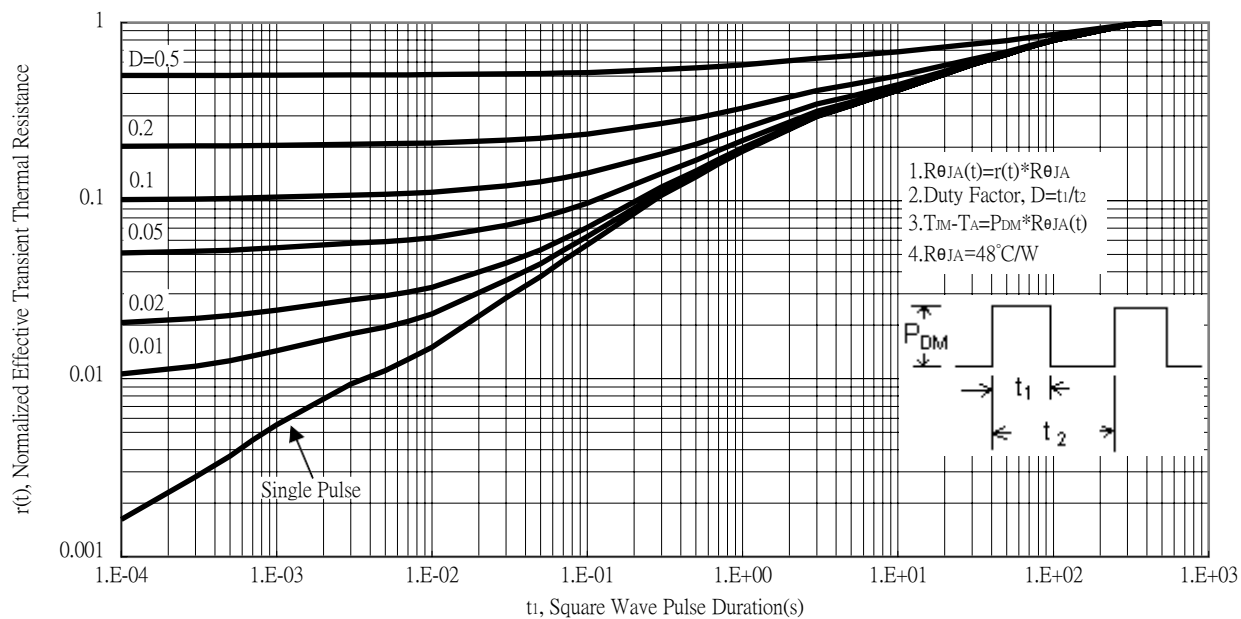


Typical Characteristics (Cont.)

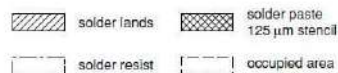
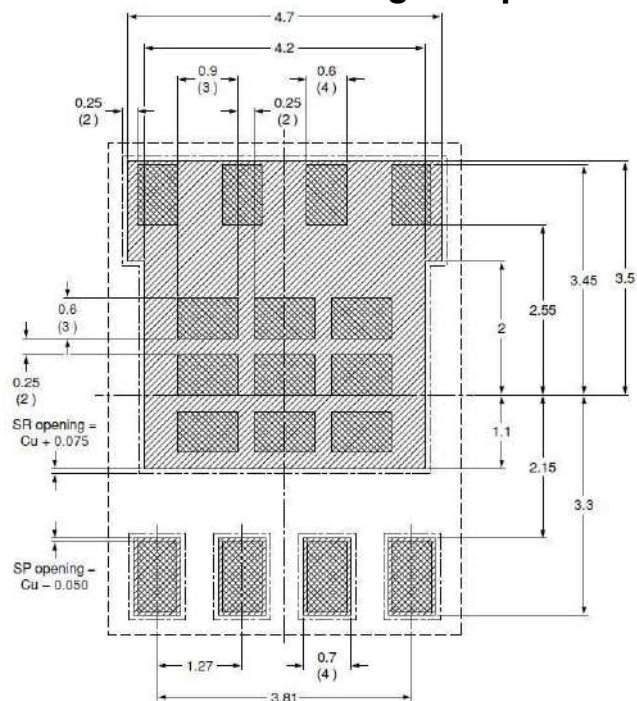
Single Pulse Power Rating, Junction to Ambient



Transient Thermal Response Curves

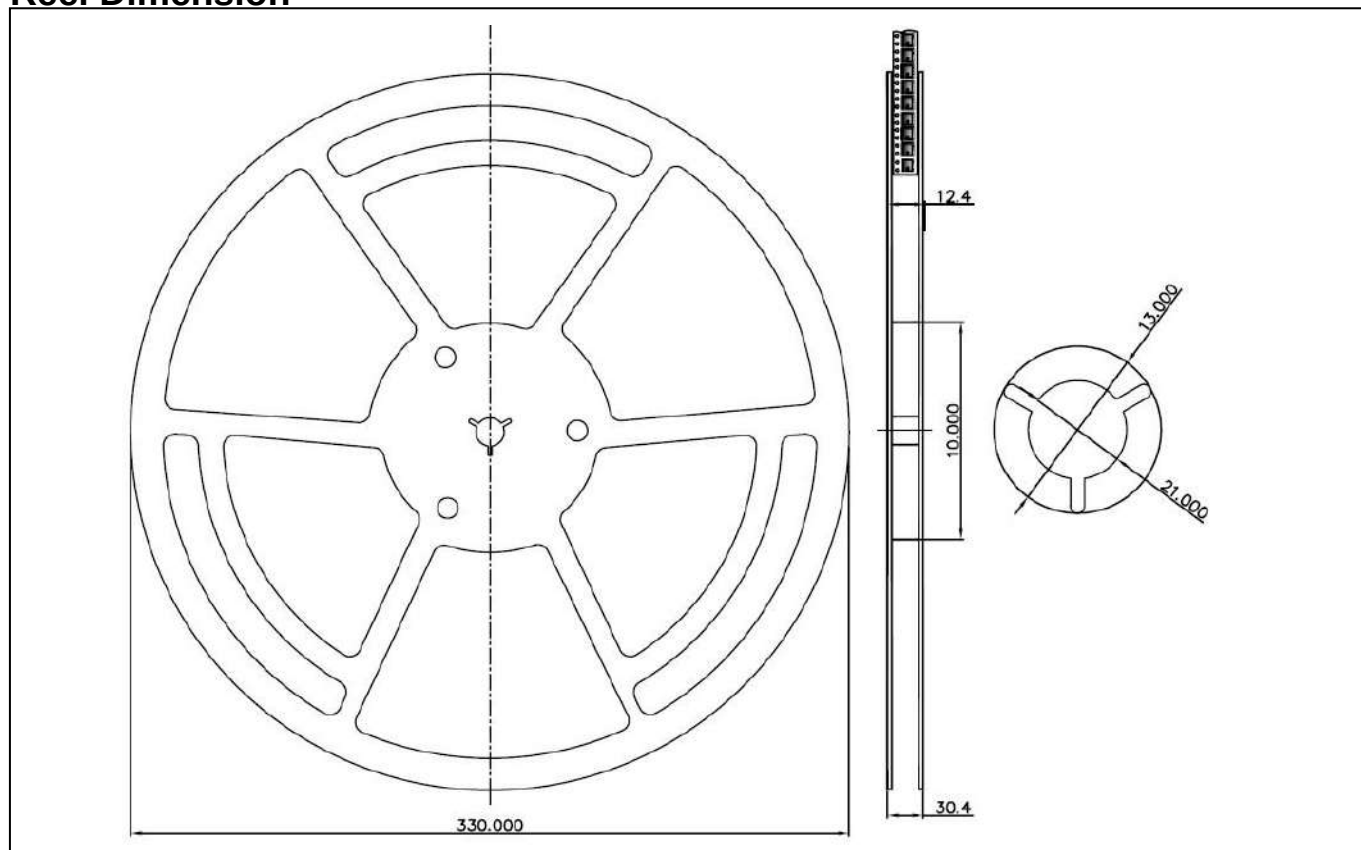


Recommended Soldering Footprint & Stencil Design

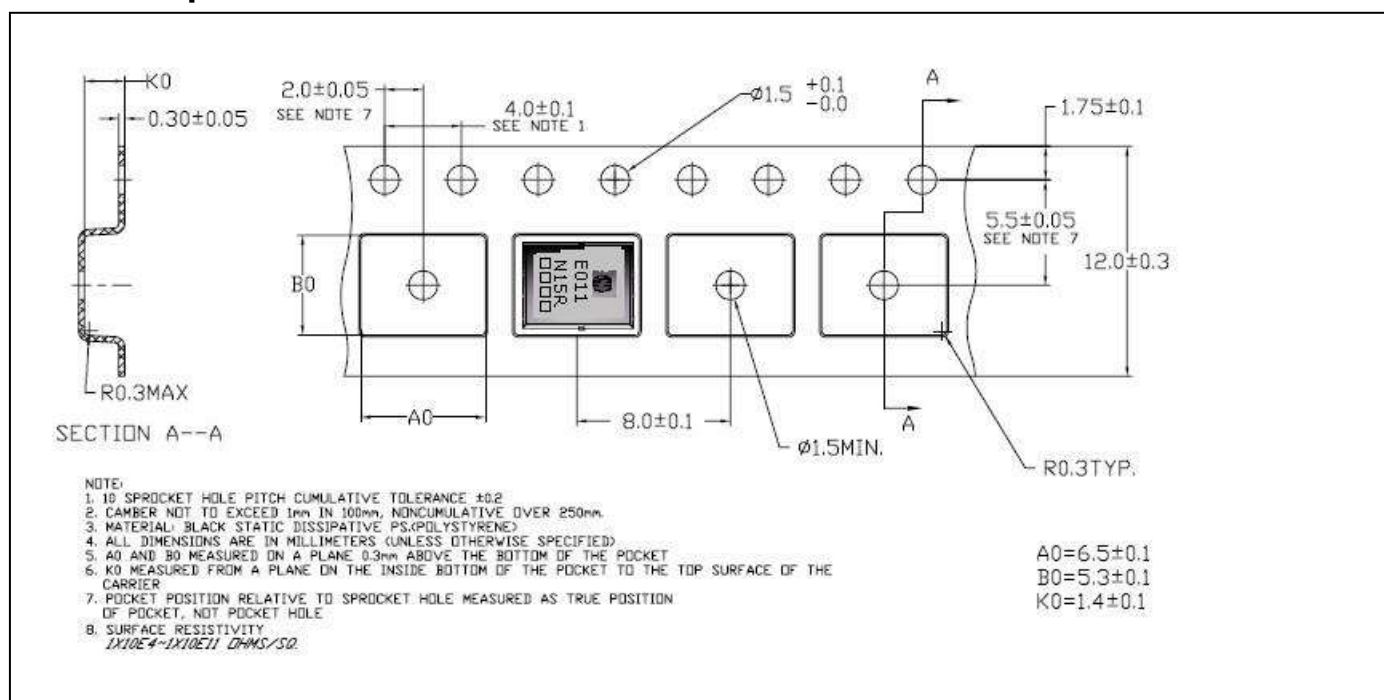


unit : mm

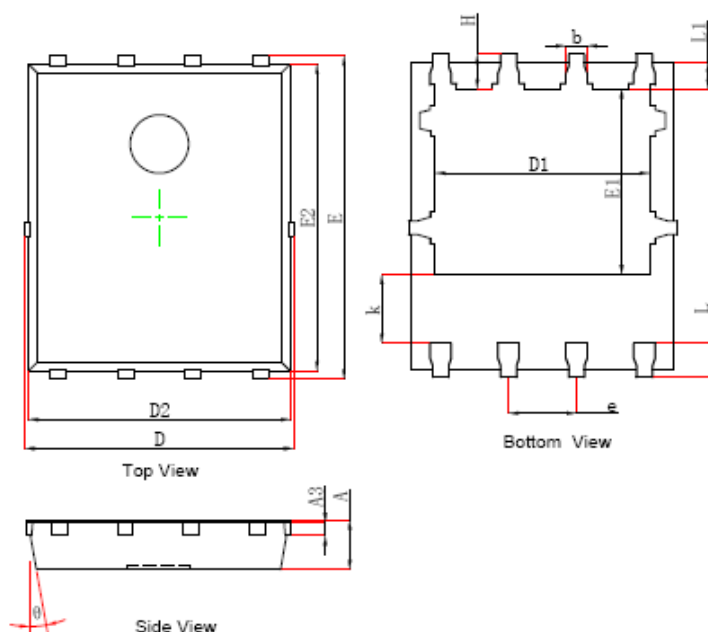
Reel Dimension



Carrier Tape Dimension

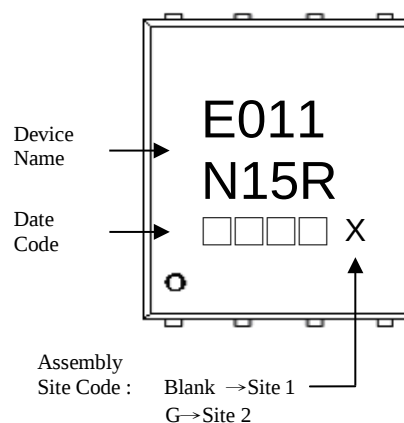


DFN5x6 Dimension



8-Lead DFN5x6 Plastic Package

Marking :



Date Code(counting from left to right) :

1st code: year code, the last digit of Christian year

2nd code : month code, Jan→A, Feb→B, Mar→C, Apr→D

May→E, Jun→F, Jul→G, Aug→H, Sep→J,

Oct→K, Nov→L, Dec→M

3rd and 4th codes : production serial number, 01~99

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043	k	1.100	-	0.043	-
A3	0.200	0.300	0.008	0.012	b	0.330	0.510	0.013	0.020
D	4.944	5.096	0.195	0.201	e	1.270	TYP.	0.050	TYP.
E	5.900	6.126	0.232	0.241	L	0.510	0.711	0.020	0.028
D1	3.670	4.110	0.144	0.162	L1	0.310	0.576	0.012	0.023
E1	3.375	3.780	0.133	0.149	H	0.410	0.726	0.016	0.029
D2	4.800	5.000	0.189	0.197	θ	8°	12°	8°	12°
E2	5.674	5.826	0.223	0.229					