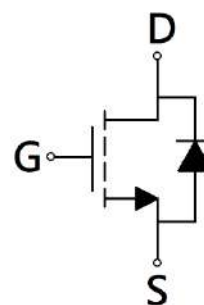
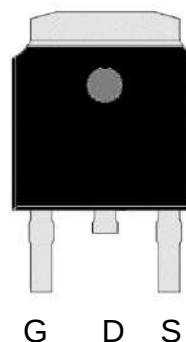


P-Channel Enhancement Mode Power MOSFET

Features:

- Low Gate Charge
- Simple Drive Requirement
- Pb-free lead plating & halogen-free package

TO-252



G : Gate S : Source D : Drain

BV_{DSS}	-100V
I_D@V_{GS}=-10V, T_C=25°C	-14A
R_{DS(ON)}@V_{GS}=-10V, I_D=-10A	106mΩ (typ)
R_{DS(ON)}@V_{GS}=-6V, I_D=-10A	137mΩ (typ)

Ordering Information

Device	Package	Shipping
KJE115P10	TO-252 (Pb-free lead plating & halogen-free package)	2500 pcs / Tape & Reel

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

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		V _{DS}	-100	V
Gate-Source Voltage		V _{GS}	±20	
Continuous Drain Current @ T _J =175°C, T _C =25°C, V _{GS} =-10V (Note 1)		I _D	-14	A
Continuous Drain Current @ T _J =175°C,T _C =100°C, V _{GS} =-10V (Note 1)			-9.9	
Continuous Drain Current @T _A =25°C, V _{GS} =-10V (Note 2)		I _{DSM}	-3.3	
Continuous Drain Current @T _A =70°C, V _{GS} =-10V (Note 2)			-2.6	
Pulsed Drain Current (Note 3)		I _{DM}	-56	
Avalanche Current (Note 3)		I _{AS}	-14	
Avalanche Energy @ L=0.7mH, I _D =-14A, R _G =25Ω (Note 2 & 4)		E _{AS}	68	mJ
Total Power Dissipation	T _C =25°C (Note 1)	P _D	50	W
	T _C =100°C (Note 1)		25	
	T _A =25°C (Note 2)	P _{DSM}	2.5	
	T _A =70°C (Note 2)		1.6	
Operating Junction and Storage Temperature Range		T _j , T _{stg}	-55~+175	°C

Thermal Data

Parameter	Symbol	Typical	Maximum	Unit
Thermal Resistance, Junction-to-case	R _{θJC}	2.7	3	°C/W
Thermal Resistance, Junction-to-ambient, t≤10s (Note 2)	R _{θJA}	15	18	
Thermal Resistance, Junction-to-ambient, steady state		40	50	

- Note : 1. The power dissipation P_D is based on T_{J(MAX)}=175 °C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heatsinking is used.
2. 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_{DSM} 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.
3. Pulse width limited by junction temperature T_{J(MAX)}=175 °C. Ratings are based on low frequency and low duty cycles to keep initial T_J=25 °C.

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

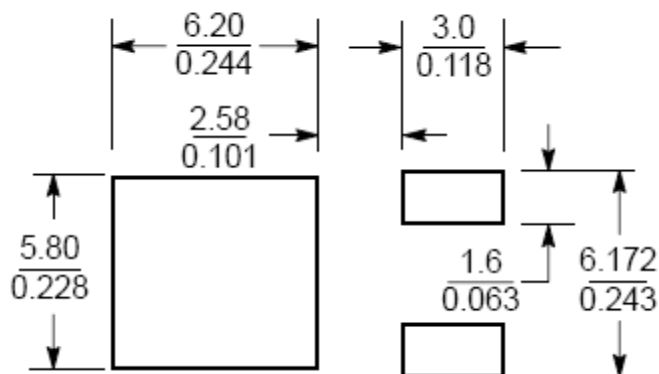
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	-100	-	-	V	V _{GS} =0V, I _D =-250μA
V _{GS(th)}	-2	-	-4		V _{DS} =V _{GS} , I _D =-250μA
I _{GSS}	-	-	±100	nA	V _{GS} =±20V, V _{DS} =0V
I _{DSS}	-	-	-1	μA	V _{DS} =-80V, V _{GS} =0V
	-	-	-25		V _{DS} =-80V, V _{GS} =0V, T _J =125°C
I _{D(ON)} *1	-14	-	-	A	V _{DS} =-5V, V _{GS} =-10V
R _{DS(ON)} *1	-	106	135	mΩ	V _{GS} =-10V, I _D =-10A
	-	137	180		V _{GS} =-6V, I _D =-10A
G _{FS} *1	-	13	-	S	V _{DS} =-5V, I _D =-10A
Dynamic					
Q _g *1, 2	-	19	28.5	nC	I _D =-7A, V _{DS} =-80V, V _{GS} =-10V
Q _{gs} *1, 2	-	5.2	-		
Q _{gd} *1, 2	-	6.1	-		
t _{d(ON)} *1, 2	-	12	18	ns	V _{DS} =-20V, I _D =-1A, V _{GS} =-10V, R _G =6Ω
tr *1, 2	-	16.2	24.3		
t _{d(OFF)} *1, 2	-	69.4	104.1		
t _f *1, 2	-	65	97.5		
C _{iss}	-	1028	-	pF	V _{GS} =0V, V _{DS} =-25V, f=1MHz
C _{oss}	-	116	-		
C _{rss}	-	48	-		
R _g	-	11	-	Ω	V _{DS} =0V, f=1MHz
Source-Drain Diode Ratings and Characteristics					
I _S *1	-	-	-14	A	
I _{SM} *1	-	-	-56		
V _{SD} *1	-	-0.86	-1.2	V	I _S =-10A, V _{GS} =0V
trr	-	31.7	47.5	ns	I _F =-10A, dI _F /dt=100A/μs
Q _{rr}	-	53	-	nC	

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

*2.Independent of operating temperature

*3.Pulse width limited by maximum junction temperature.

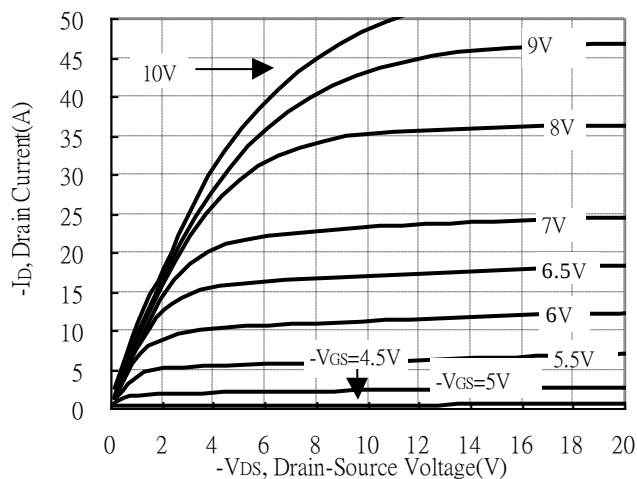
Recommended soldering footprint



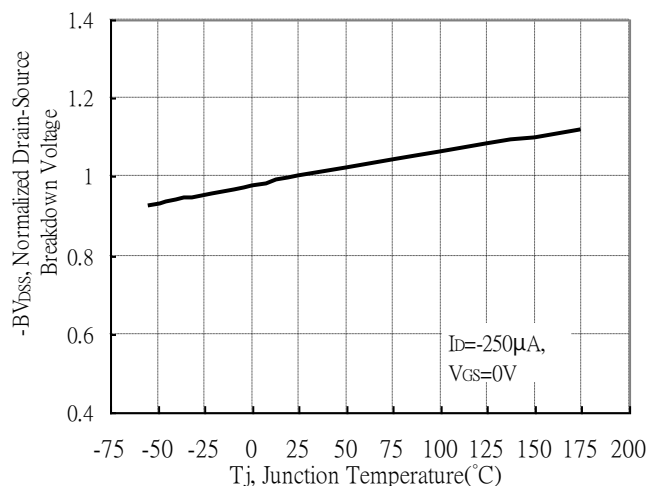
Unit ($\frac{\text{mm}}{\text{inch}}$)

Typical Characteristics

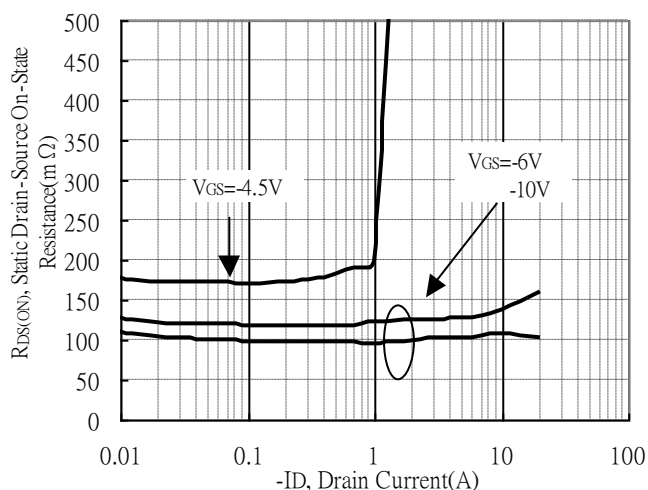
Typical Output Characteristics



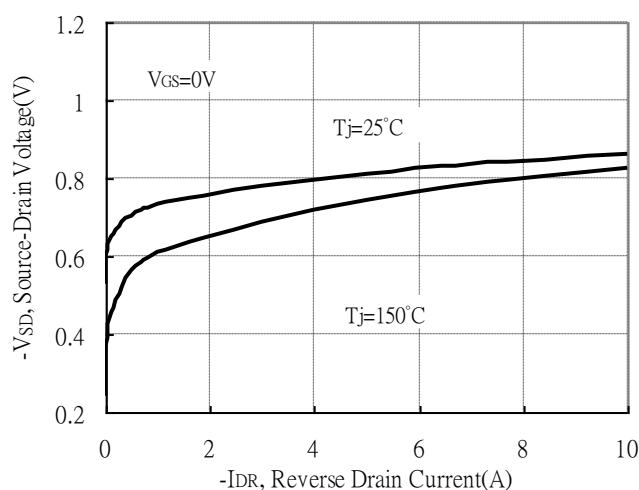
Breakdown Voltage vs Ambient Temperature



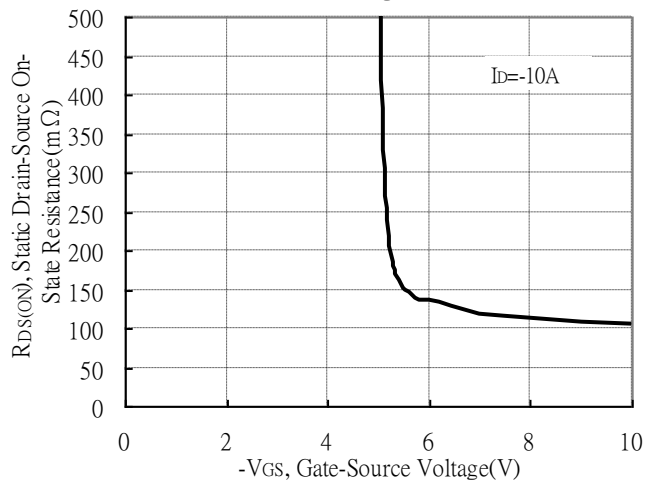
Static Drain-Source On-State resistance vs Drain Current



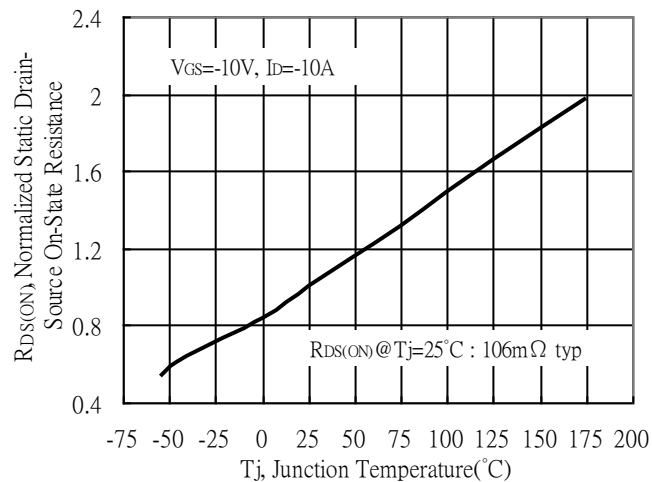
Reverse Drain Current vs Source-Drain Voltage



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

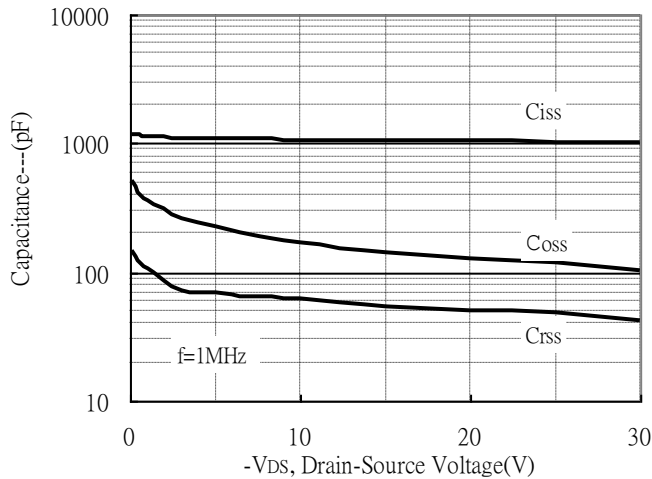


Drain-Source On-State Resistance vs Junction Temperature

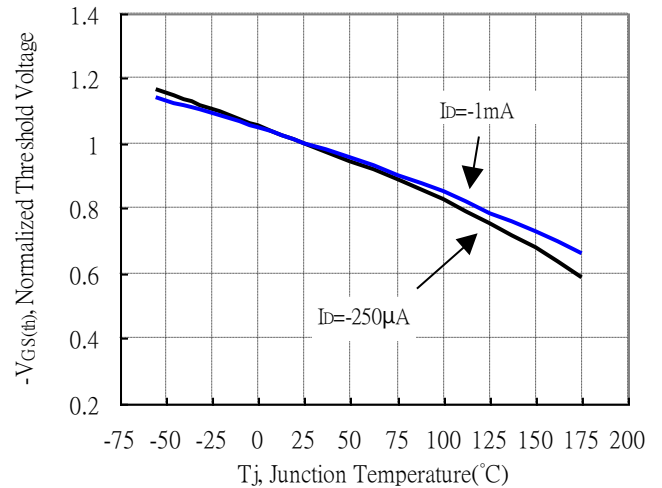


Typical Characteristics (Cont.)

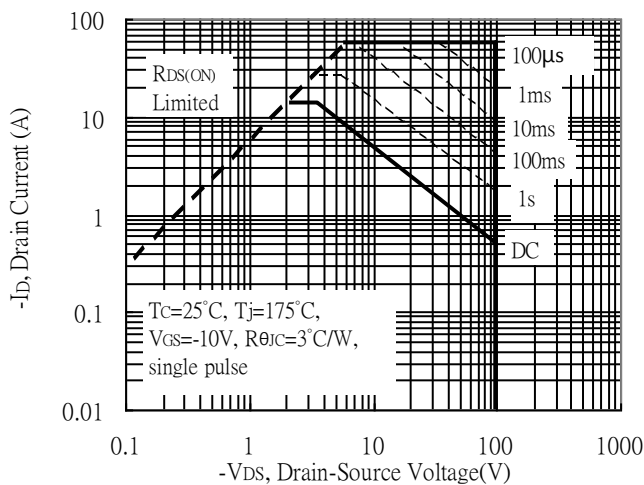
Capacitance vs Drain-to-Source Voltage



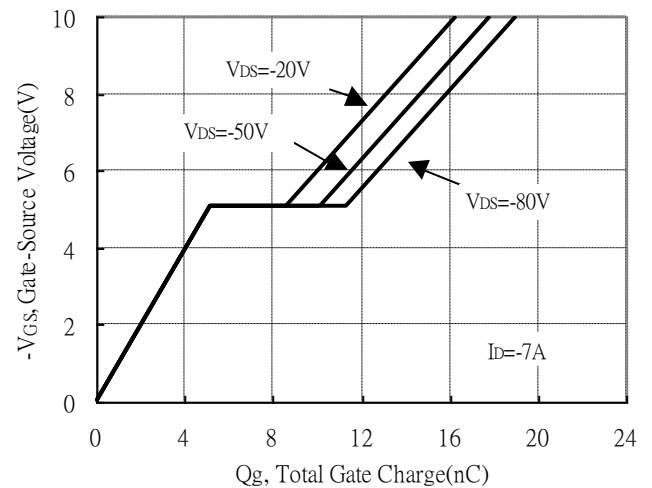
Threshold Voltage vs Junction Temperature



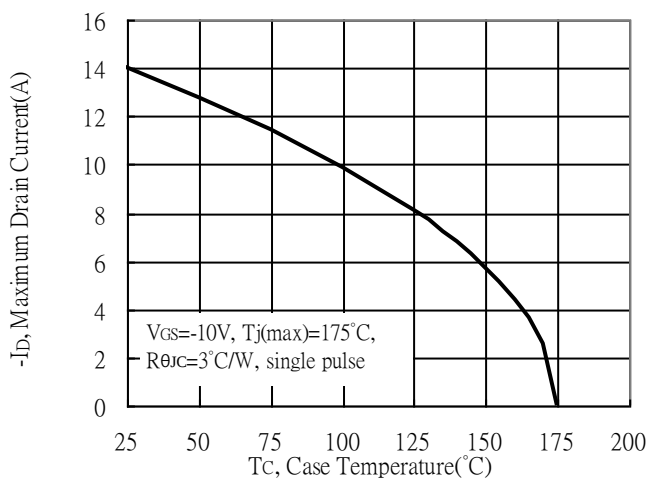
Maximum Safe Operating Area



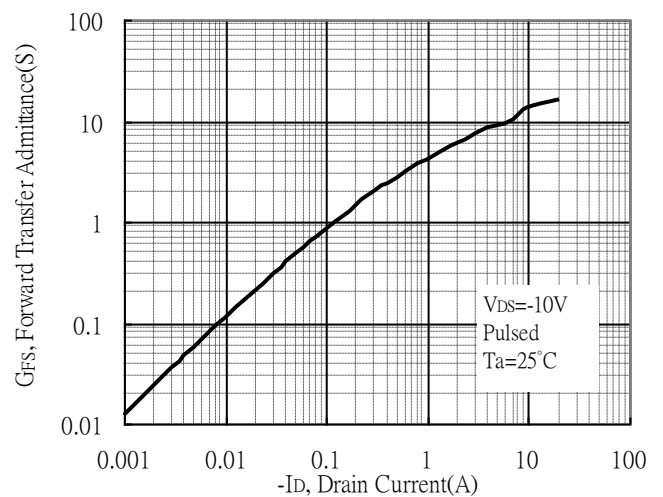
Gate Charge Characteristics



Maximum Drain Current vs Case Temperature

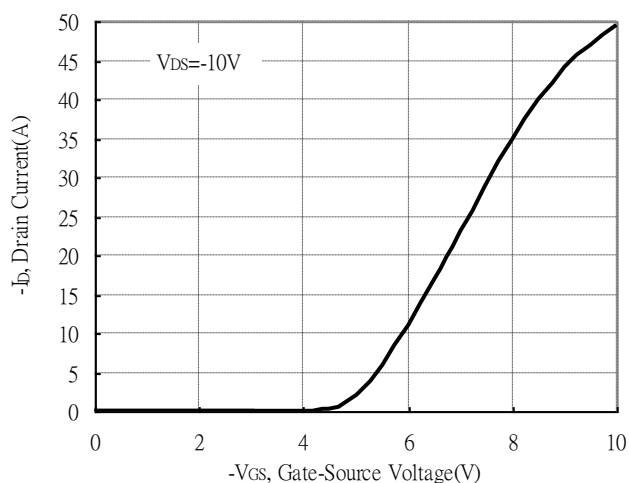


Forward Transfer Admittance vs Drain Current

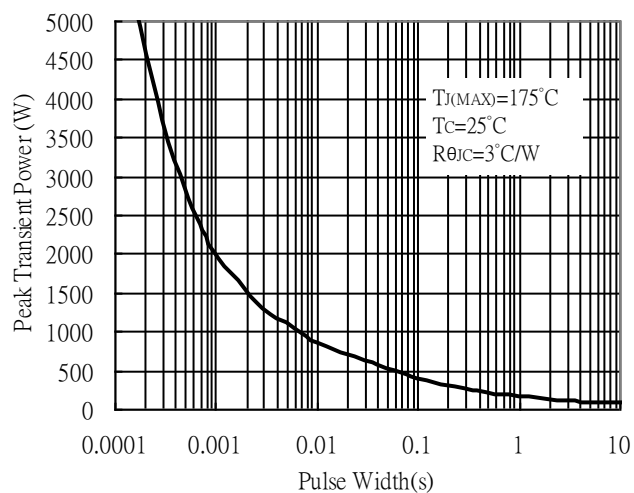


Typical Characteristics (Cont.)

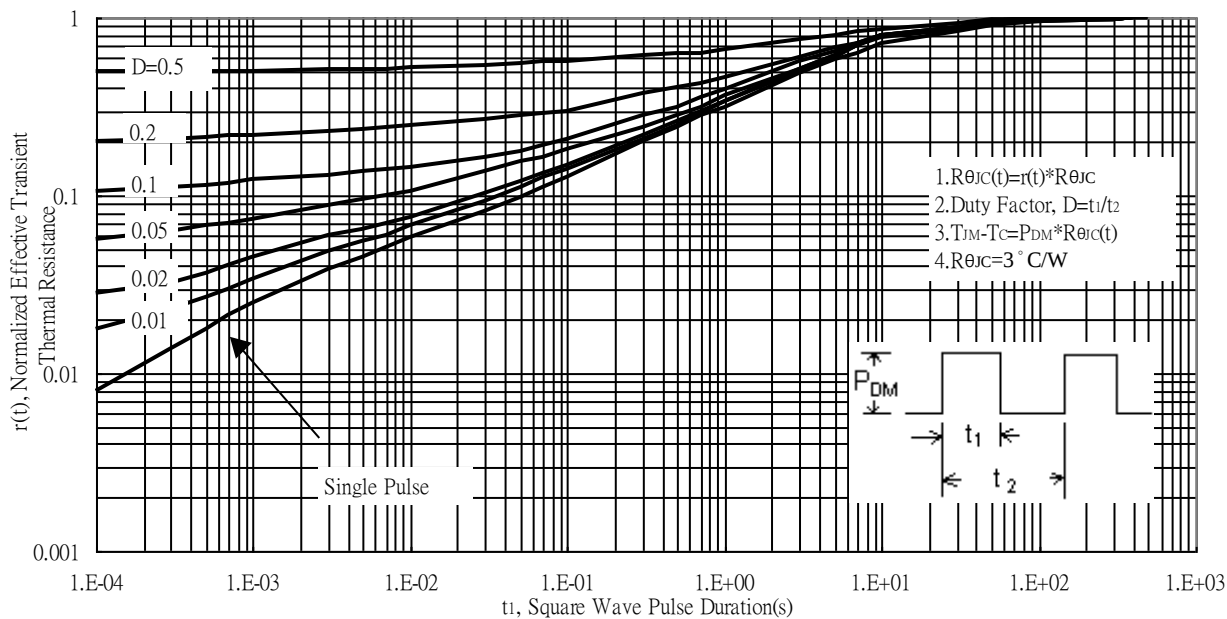
Typical Transfer Characteristics



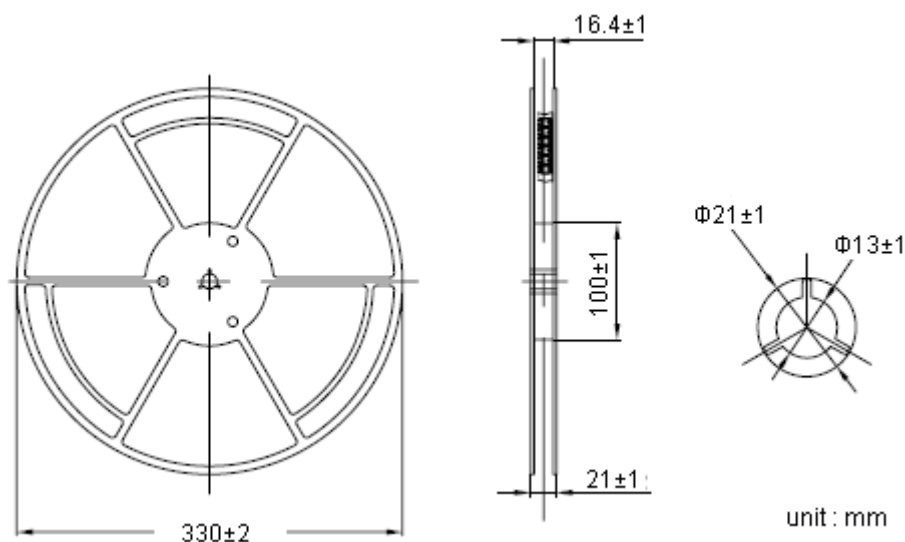
Single Pulse Maximum Power Dissipation



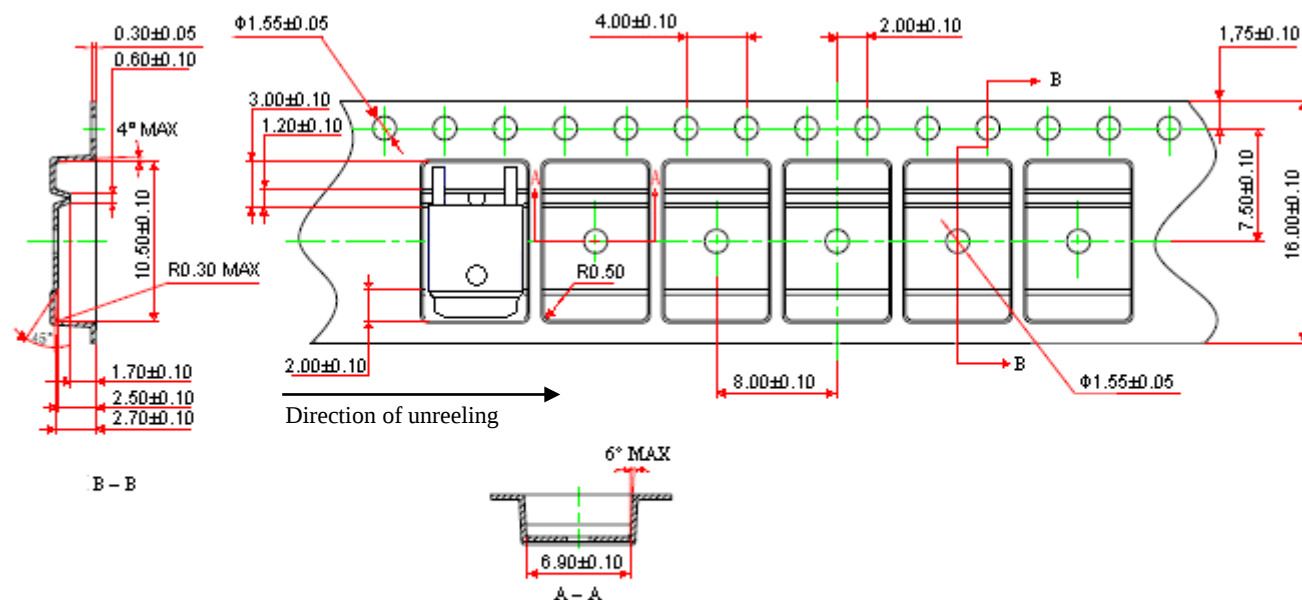
Transient Thermal Response Curves



Reel Dimension



Carrier Tape Dimension

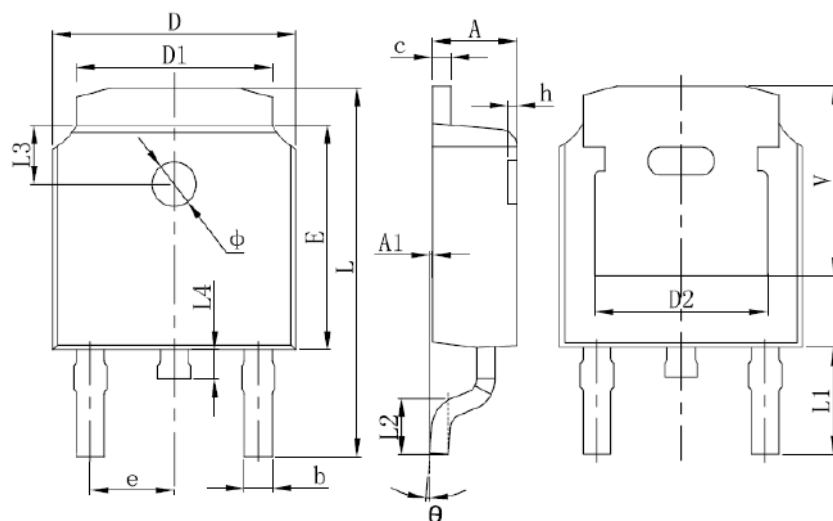


Notes:

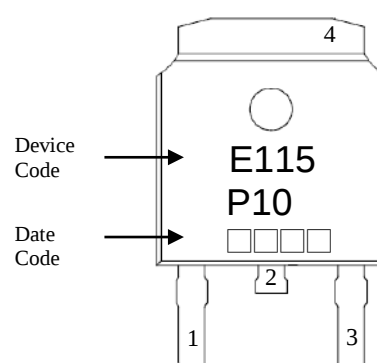
1. 10 sprocket hole pitch cumulative tolerance ± 0.2 .
2. Camber not to exceed 1mm in 100mm.
3. Material: conductive black polystyrene, antistatic coated : $10^5 \Omega/\square \sim 10^{11} \Omega/\square$

unit : mm

TO-252 Dimension



Marking:



Style: Pin 1.Gate 2.Drain 3.Source
4.Drain

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

3-Lead TO-252 Plastic Surface Mount Package

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.087	0.094	2.200	2.400	L	0.382	0.406	9.712	10.312
A1	0.000	0.005	0.000	0.127	L1	0.114	REF	2.900	REF
b	0.025	0.030	0.635	0.770	L2	0.055	0.067	1.400	1.700
c	0.018	0.023	0.460	0.580	L3	0.063	REF	1.600	REF
D	0.256	0.264	6.500	6.700	L4	0.024	0.039	0.600	1.000
D1	0.201	0.215	5.100	5.460	Φ	0.043	0.051	1.100	1.300
D2	0.190	REF	4.830	REF	θ	0°	8°	0°	8°
E	0.236	0.244	6.000	6.200	h	0.000	0.012	0.000	0.300
e	0.086	0.094	2.186	2.386	V	0.207	REF	5.250	REF