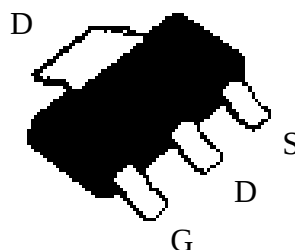


30V N-CHANNEL Enhancement Mode MOSFET

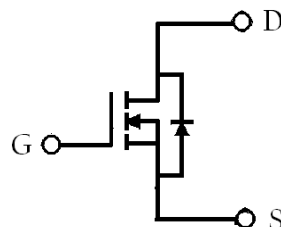
Features:

- Single Drive Requirement
- Low On-resistance
- Fast Switching Characteristic
- Pb-free lead plating package

SOT-223



BV_{DSS}	30V
$I_D@V_{GS}=10V, T_A=25^{\circ}C$	8.3A
$R_{DS(on)}@V_{GS}=10V, I_D=4A$	19m Ω (typ)
$R_{DS(on)}@V_{GS}=4.5V, I_D=3A$	25m Ω (typ)



G : Gate
S : Source
D : Drain

Ordering Information

Device	Package	Shipping
KLN3055	SOT-223 (Pb-free lead plating and halogen-free package)	2500 pcs / tape & reel

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V _{DS}	30	V
Gate-Source Voltage	V _{GS}	±20	
Continuous Drain Current @V _{GS} =10V, T _A =25°C	I _D	8.3	A
Continuous Drain Current @V _{GS} =10V, T _A =70°C		6.6	
Pulsed Drain Current *1	I _{DM}	20	
Total Power Dissipation *2	P _D	T _A =25°C 2.7	W
		T _A =100°C 1.1	
Operating Junction and Storage Temperature Range	T _j , T _{stg}	-55~+150	°C

Note : *1. Pulse width limited by safe operating area

*2. Surface mounted on a 1 in² pad of 2 oz. copper, t≤10s.

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	R _{th,j-c}	18	°C/W
Thermal Resistance, Junction-to-ambient, max	R _{th,j-a}	45 (Note)	

Note : Surface mounted on a 1 in² pad of 2 oz. copper, t≤10s; 120 °C/W when mounted on minimum copper pad.

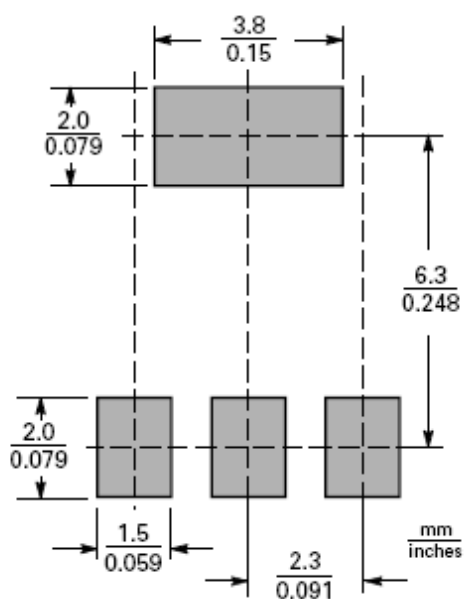
Electrical Characteristics (T_j=25°C, unless otherwise noted)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	30	-	-	V	V _{GS} =0V, I _D =250μA
ΔBV _{DSS} /ΔT _j	-	0.02	-	V/°C	Reference to 25°C, I _D =250μA
V _{GS(th)}	1.0	1.6	2.5	V	V _{DS} =V _{GS} , I _D =250μA
I _{GSS}	-	-	±100	nA	V _{GS} =±20V, V _{DS} =0V
I _{DSS}	-	-	1	μA	V _{DS} =30V, V _{GS} =0V
I _{DSS}	-	-	25		V _{DS} =24V, V _{GS} =0V (T _j =70°C)
*R _{DS(ON)}	-	19	26	mΩ	I _D =4A, V _{GS} =10V
	-	25	40		I _D =3A, V _{GS} =4.5V
Dynamic					
C _{iss}	-	745	-	pF	V _{DS} =25V, V _{GS} =0V, f=1MHz
C _{oss}	-	52	-		
C _{rss}	-	58	-		
*t _{d(ON)}	-	4.5	-	ns	V _{DS} =15V, I _D =1A, V _{GS} =10V, R _G =3.3Ω
*t _r	-	14	-		
*t _{d(OFF)}	-	18	-		
*t _f	-	3.7	-		
*Q _g	-	7.4	-	nC	V _{DS} =24V, I _D =4A, V _{GS} =5V
*Q _{gs}	-	2.6	-		
*Q _{gd}	-	2.8	-		

Source-Drain Diode					
*V _{SD}	-	-	1.3	V	V _{GS} =0V, I _S =2A
*I _S	-	-	4	A	V _D =V _{GS} =0V, V _S =1.3V
*I _{SM}	-	-	20		

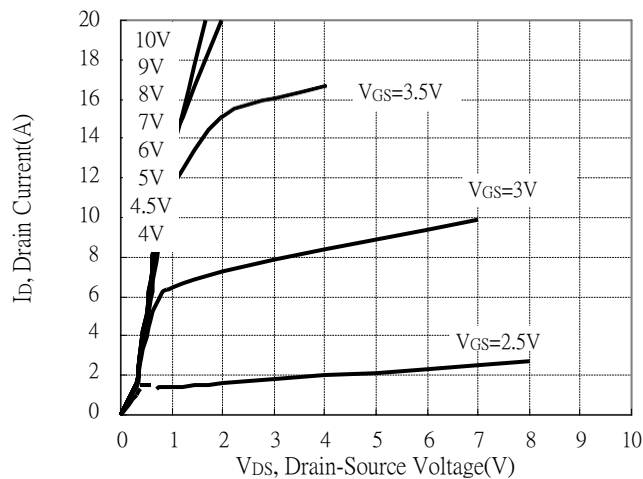
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Recommended soldering footprint

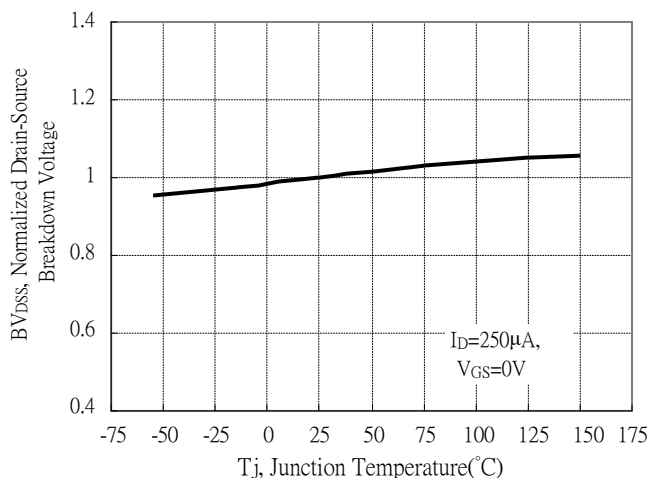


Typical Characteristics

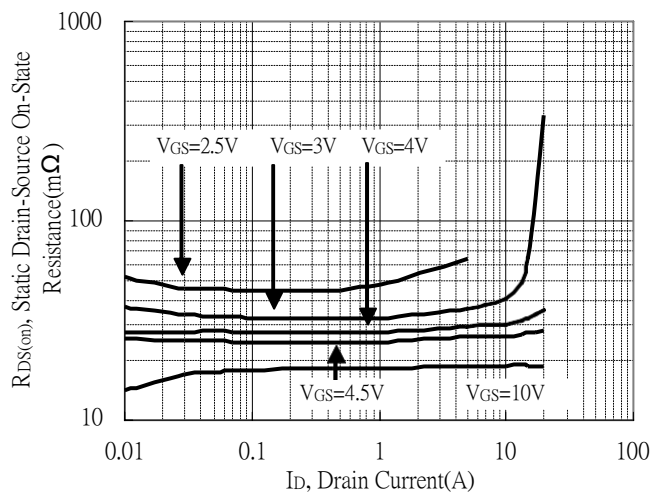
Typical Output Characteristics



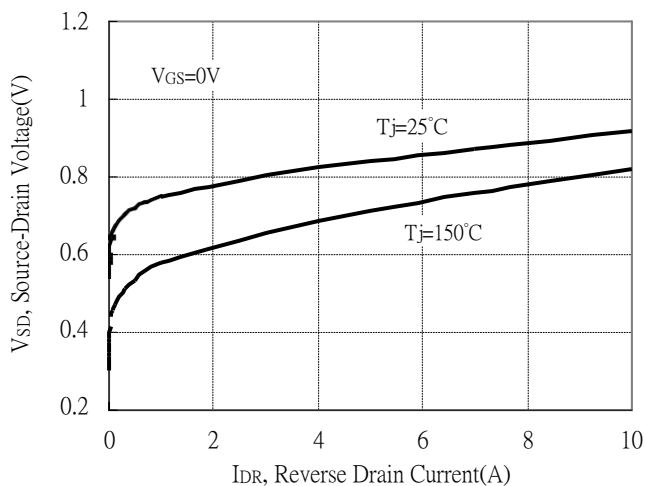
Breakdown Voltage vs Ambient Temperature



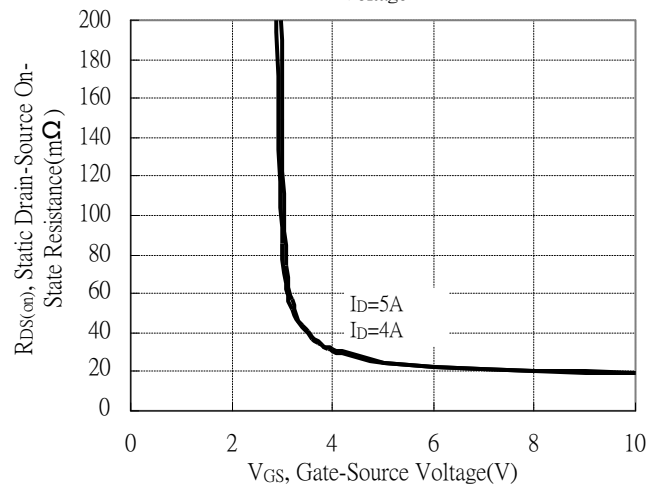
Static Drain-Source On-State resistance vs Drain Current



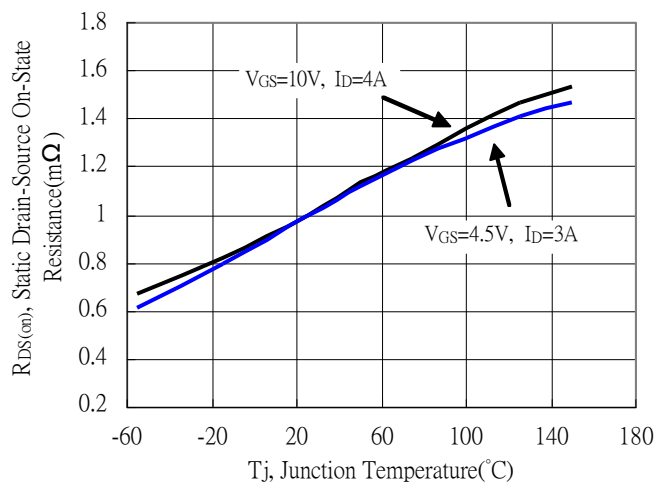
Reverse Drain Current vs Source-Drain Voltage



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

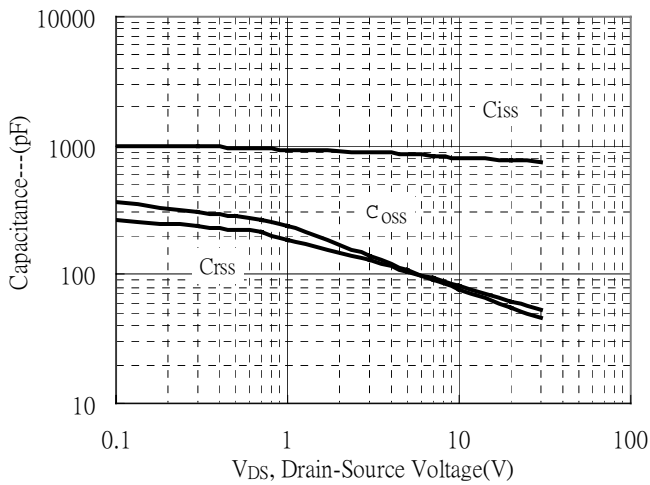


Drain-Source On-State Resistance vs Junction Temperature

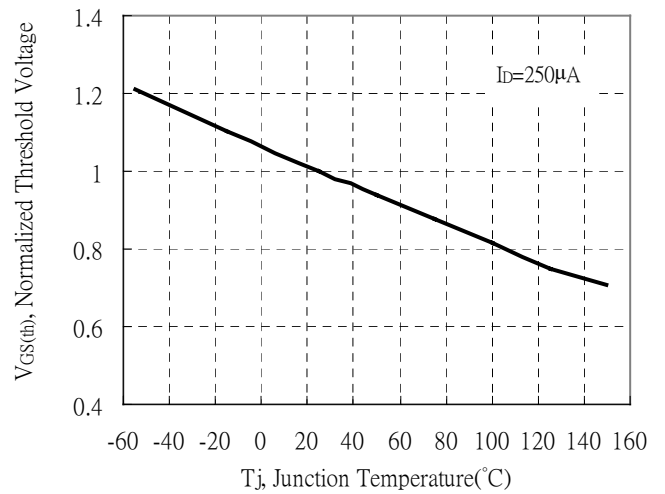


Typical Characteristics(Cont.)

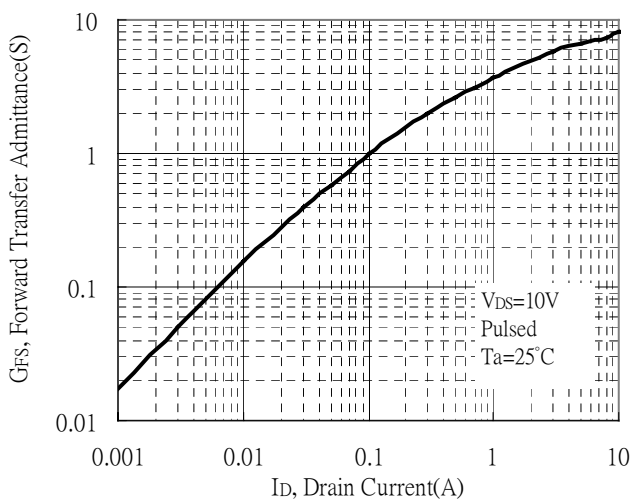
Capacitance vs Drain-to-Source Voltage



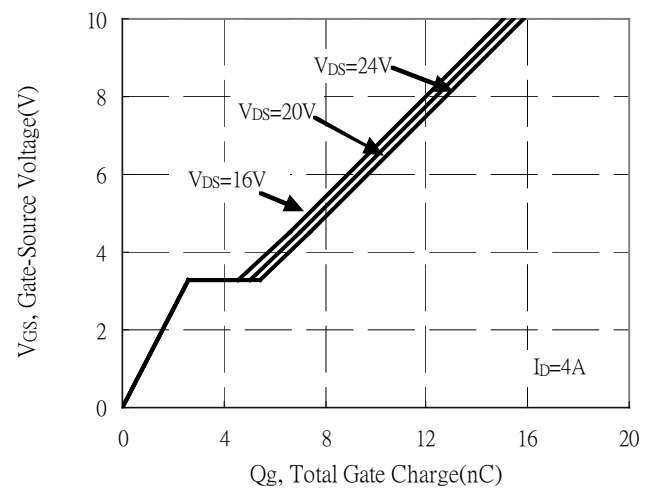
Threshold Voltage vs Junction Temperature



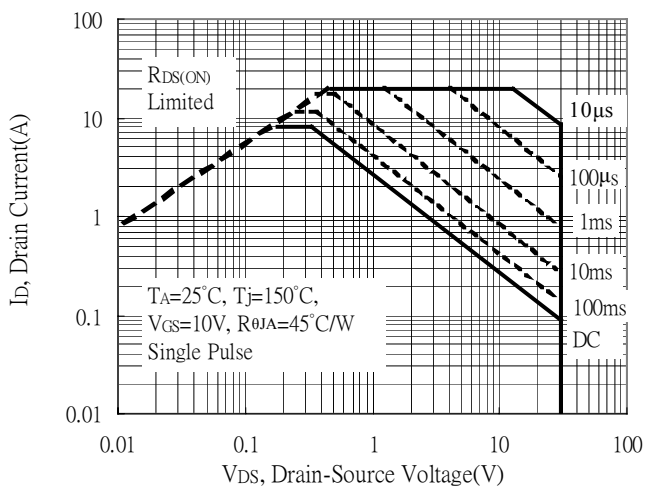
Forward Transfer Admittance vs Drain Current



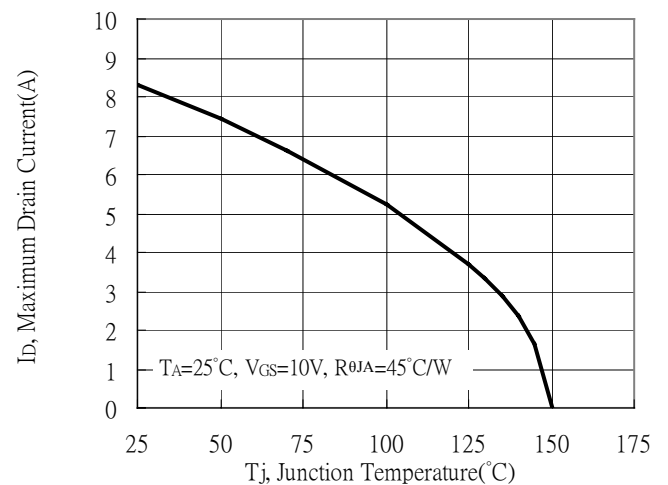
Gate Charge Characteristics



Maximum Safe Operating Area

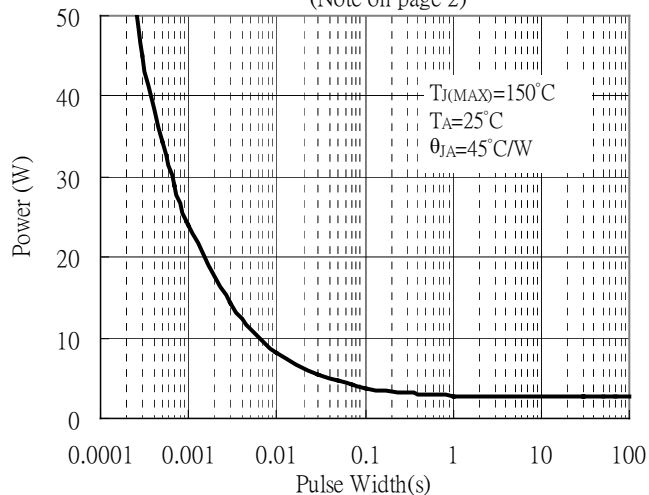


Maximum Drain Current vs Junction Temperature

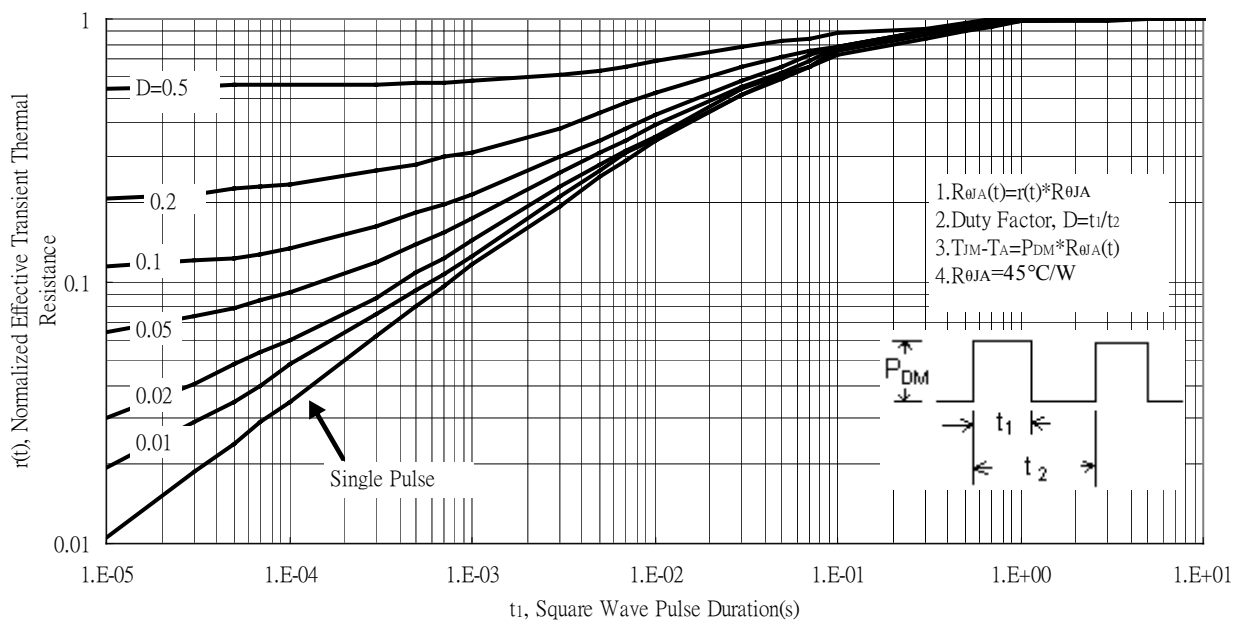


Typical Characteristics(Cont.)

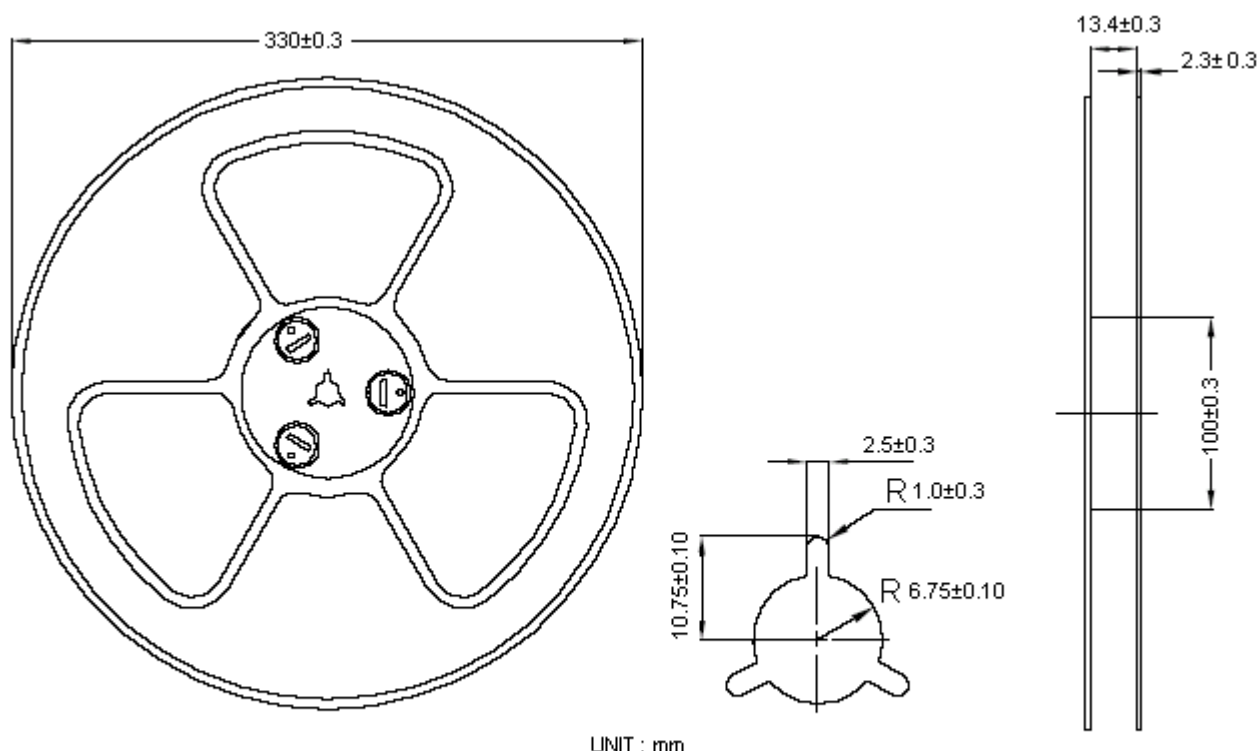
Single Pulse Power Rating, Junction to Ambient
 (Note on page 2)



Transient Thermal Response Curves



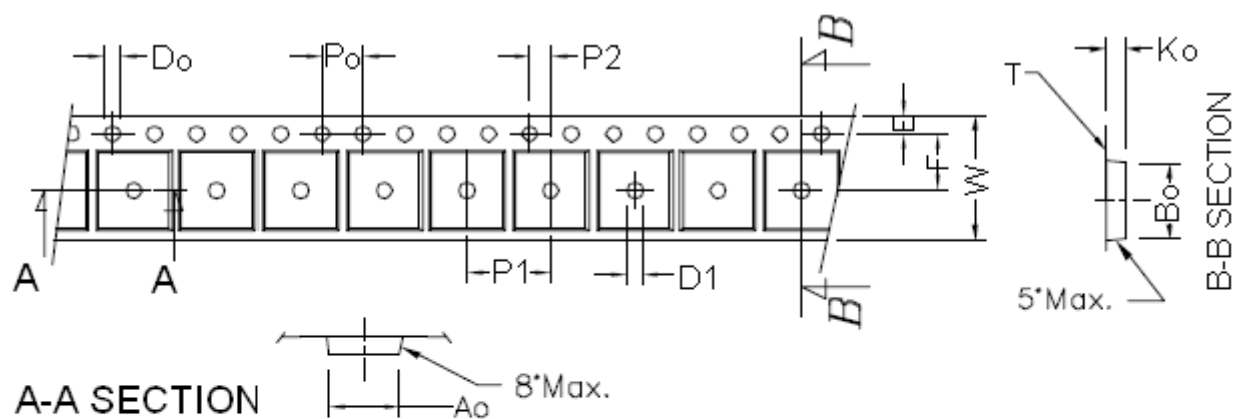
Reel Dimension



UNIT : mm

NOTE : 1. Material : Anti-static polystyrene
 2. Surface resistivity $10^9 \Omega/\text{sq}$

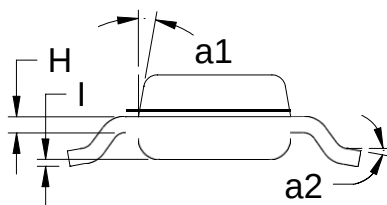
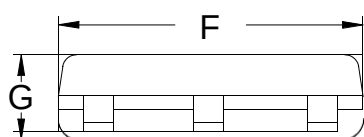
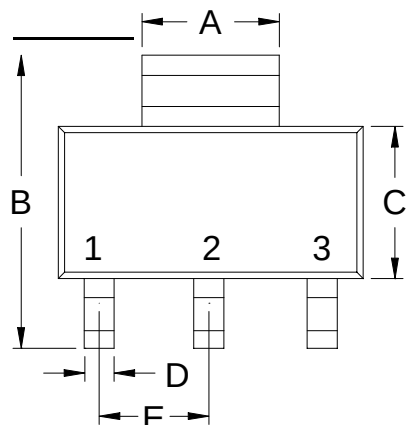
Carrier Tape Dimension



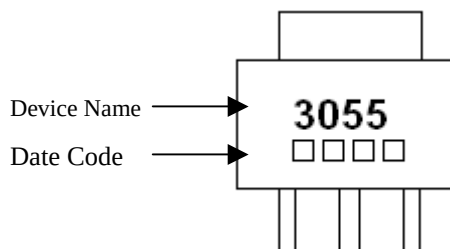
Symbol	Ao	Bo	Ko	Po	P1	P2	T
Spec	6.83 ± 0.1	7.42 ± 0.1	1.88 ± 0.1	4.0 ± 0.1	8.0 ± 0.10	2.0 ± 0.05	0.292 ± 0.02
Symbol	E	F	Do	D1	W	10Po	
Spec	1.75 ± 0.1	5.5 ± 0.05	1.60 ± 0.1	1.5 ± 0.25	$12^{+0.3}_{-0.1}$	40.0 ± 0.2	

Unit : mm

SOT-223 Dimension



Marking:



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

3-Lead SOT-223 Plastic
Surface Mounted Package

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1142	0.1220	2.90	3.10	G	0.0551	0.0709	1.40	1.80
B	0.2638	0.2874	6.70	7.30	H	0.0098	0.0138	0.23	0.35
C	0.1299	0.1457	3.30	3.70	I	0.0008	0.0039	0.02	0.10
D	0.0236	0.0315	0.60	0.80	a1	*13°	-	*13°	-
E	*0.0906	-	*2.30	-	a2	0°	10°	0°	10°
F	0.2480	0.2638	6.30	6.70					