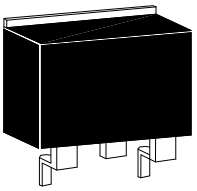
N-Channel Enhancement Mode Power MOSFET

Features:

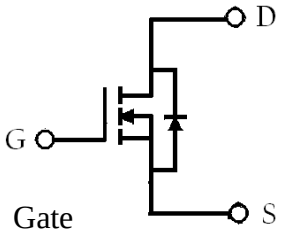
- Low Gate Charge
- Simple Drive Requirement
- Repetitive Avalanche Rated
- Fast Switching Characteristic
- RoHS compliant package

TO-263



G D S

BV_{DSS}	150V
I_D@V_{GS}=10V, T_C=25°C	44A
$R_{DS(ON)}$@V_{GS}=10V, I_D=20A	50mΩ (max)



G：Gate
D：Drain
S：Source

Ordering Information

Device	Package	Shipping
KWN2572F3	TO-263 (Pb-free lead plating and RoHS compliant package)	800 pcs / Tape & Reel

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

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		V_{DS}	150	V
Gate-Source Voltage		V_{GS}	±30	
Continuous Drain Current @V_{GS}=10V, T_C=25°C		I_D	44	A
Continuous Drain Current @V_{GS}=10V, T_C=100°C			31	
Pulsed Drain Current (Note 1)		I_{DM}	120	
Avalanche Current		I_{AS}	18	
Avalanche Energy @ L=0.1mH, I_D=20A, R_G=25Ω		E_{AS}	20	mJ
Repetitive Avalanche Energy@ L=0.1mH (Note 2)		E_{AR}	10	
Power Dissipation	T_C=25℃	P_D	156	W
	T_C=100℃		78	
Operating Junction and Storage Temperature		Tj, Tstg	-55~+175	°C

Note : 1. Pulse width limited by maximum junction temperature
2. Duty cycle ≤ 1%

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	$R_{th,j-c}$	0.96	°C/W
Thermal Resistance, Junction-to-ambient, max	$R_{th,j-a}$	62.5	

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

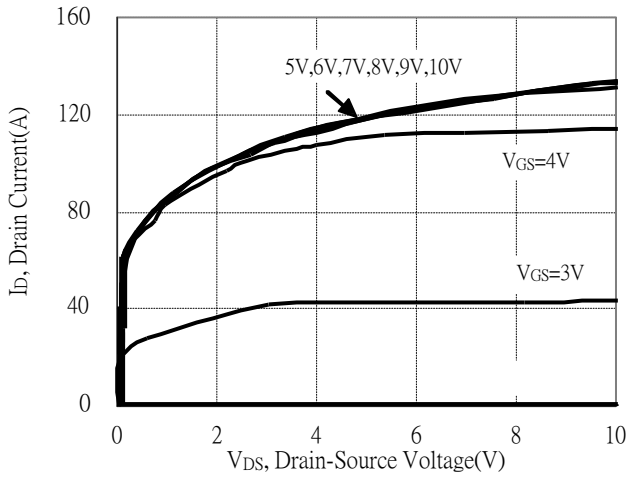
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	150	-	-	V	V_{GS}=0V, I_D=250μA
$V_{GS(th)}$	1.5	-	4.0		V_{DS} = V_{GS}, I_D=250μA
G_{FS}	-	34	-	S	V_{DS} =5V, I_D=20A
I_{GSS}	-	-	±100	nA	V_{GS}=±30V
I_{DSS}	-	-	1	μA	V_{DS} =120V, V_{GS} =0V
	-	-	25		V_{DS} =100V, V_{GS} =0V, Tj=125°C
*$R_{DS(ON)}$	-	33	50	mΩ	V_{GS} =10V, I_D=20A
*$I_{D(ON)}$	44	-	-	A	V_{DS} =10V, V_{GS} =10V
Dynamic					
*Qg	-	30	-	nC	I_D=20A, V_{DS}=80V, V_{GS}=10V
*Qgs	-	10	-		
*Qgd	-	8	-		
*$t_{d(ON)}$	-	20	-	ns	V_{DS}=75V, I_D=1A, V_{GS}=10V, R_G=6Ω
*tr	-	18	-		
*$t_{d(OFF)}$	-	47	-		
*t_f	-	20	-		
Ciss	-	2249	-	pF	V_{GS}=0V, V_{DS}=25V, f=1MHz
Coss	-	225	-		
Crss	-	118	-		

Rg	-	2	-	Ω	V_{GS}=15mV, V_{DS}=0V, f=1MHz
Source-Drain Diode					
*I_S	-	-	44	A	
*I_{SM}	-	-	120		
*V_{SD}	-	-	1.3	V	I_F=I_S, V_{GS}=0V
*trr	-	120	-	ns	I_F=25A, V_{GS}=0V, dI_F/dt=100A/μs
*Qrr	-	380	-	nC	

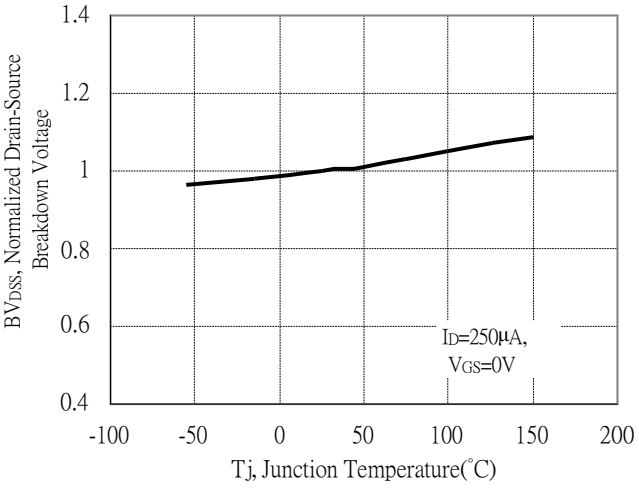
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Typical Characteristics

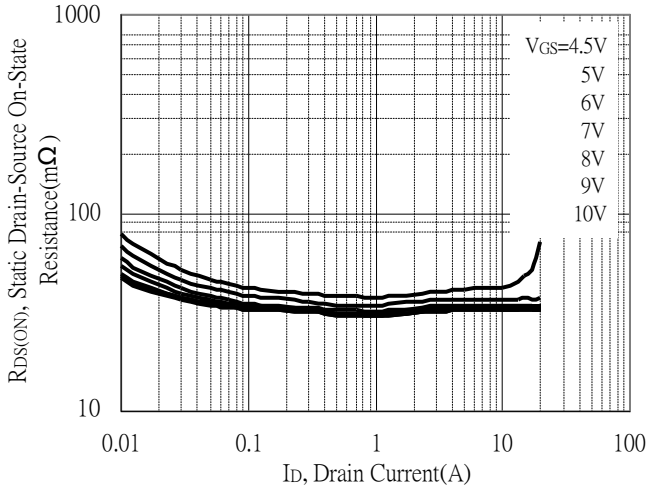
Typical Output Characteristics



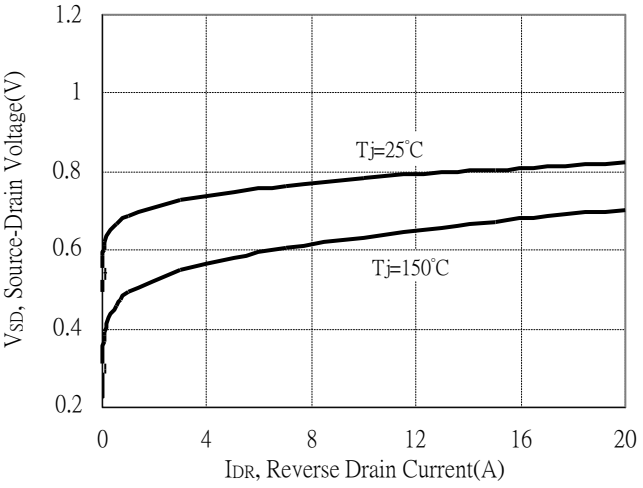
Brekdown Voltage vs Ambient Temperature



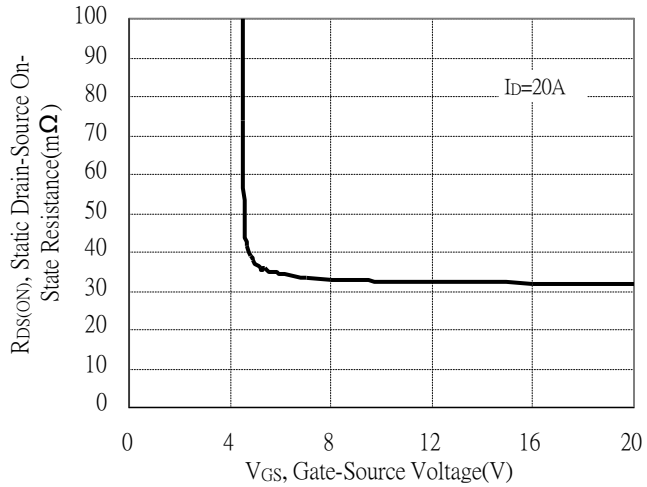
Static Drain-Source On-State resistance vs Drain Current



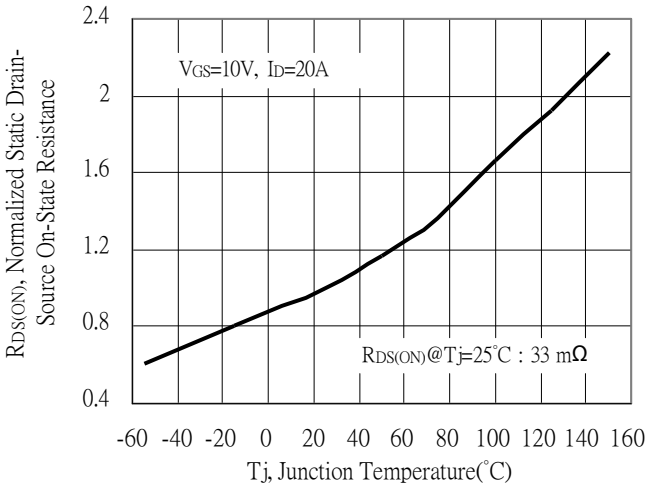
Reverse Drain Current vs Source-Drain Voltage



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

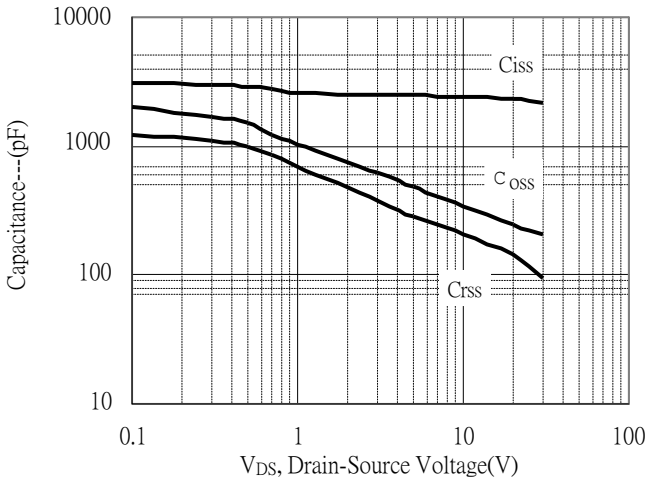


Drain-Source On-State Resistance vs Junction Tempearture

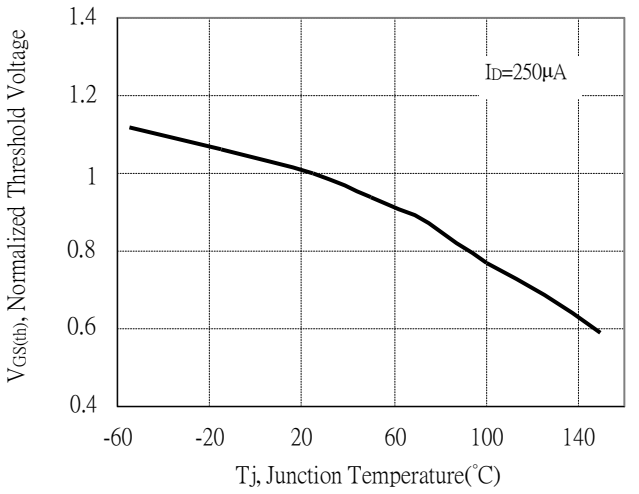


Typical Characteristics(Cont.)

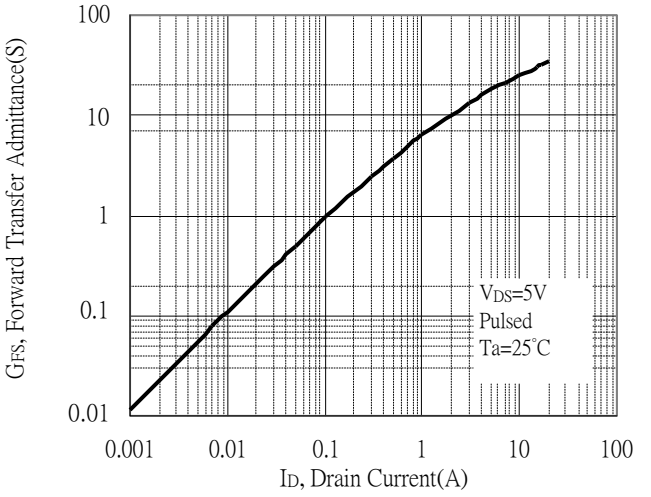
Capacitance vs Drain-to-Source Voltage



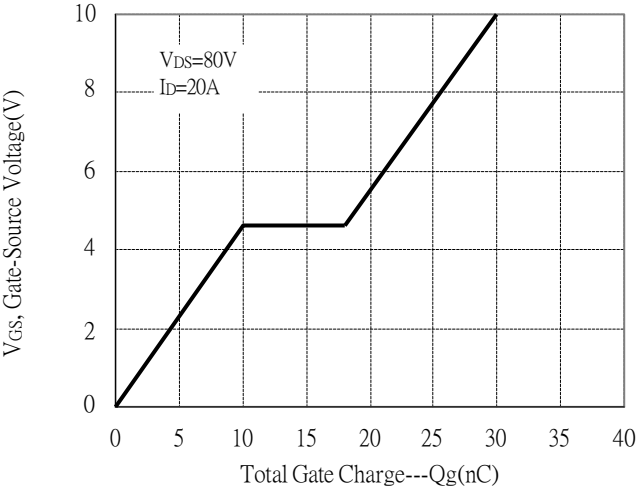
NormalizedThreshold Voltage vs Junction Tempearture



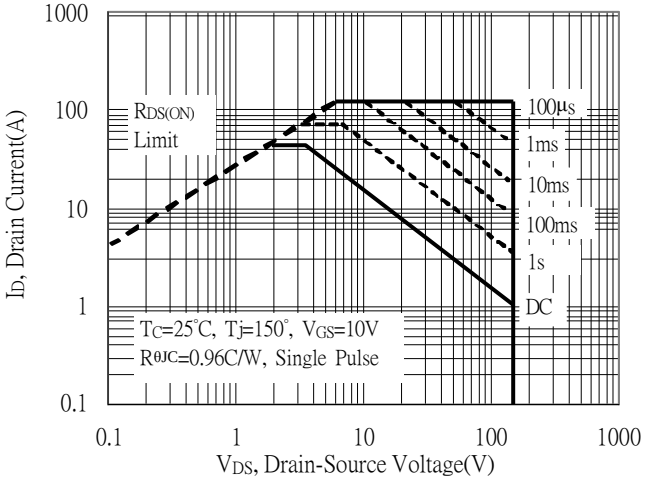
Forward Transfer Admittance vs Drain Current



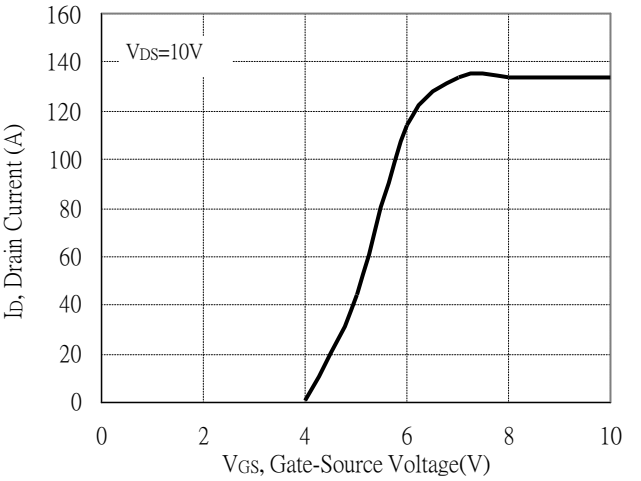
Gate Charge Characteristics



Maximum Safe Operating Area

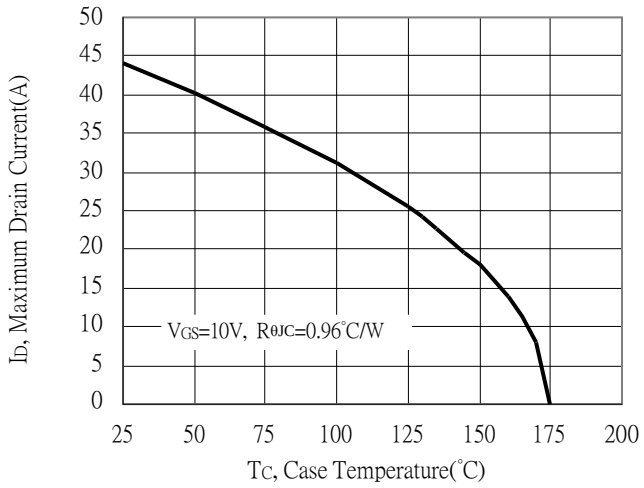


Typical Transfer Characteristics

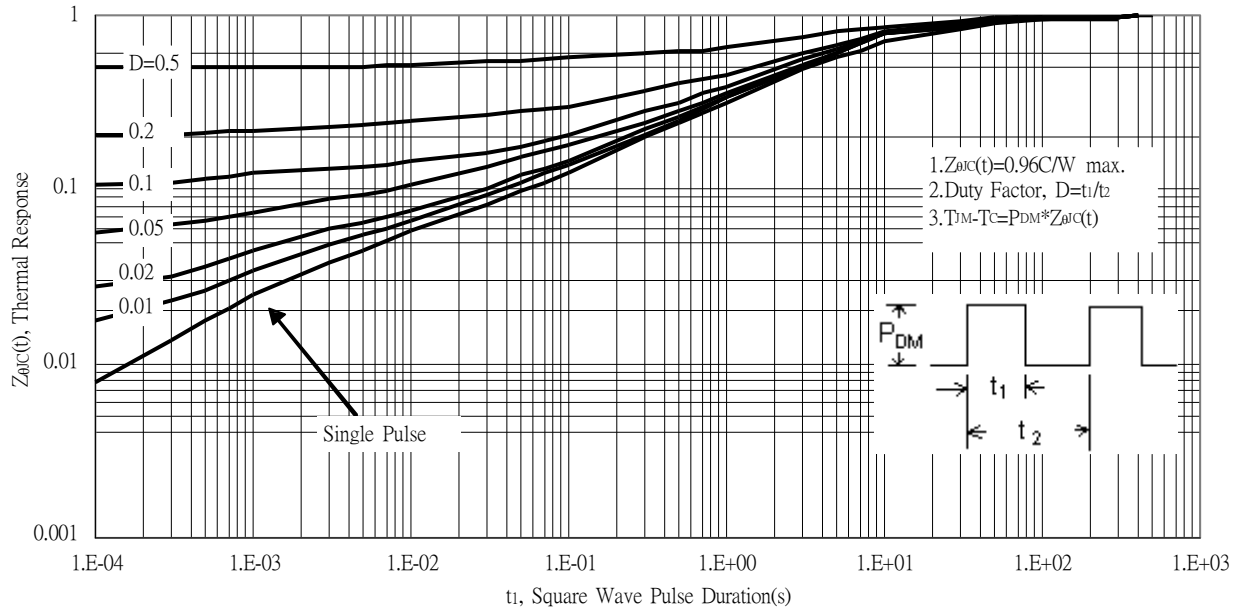


Typical Characteristics(Cont.)

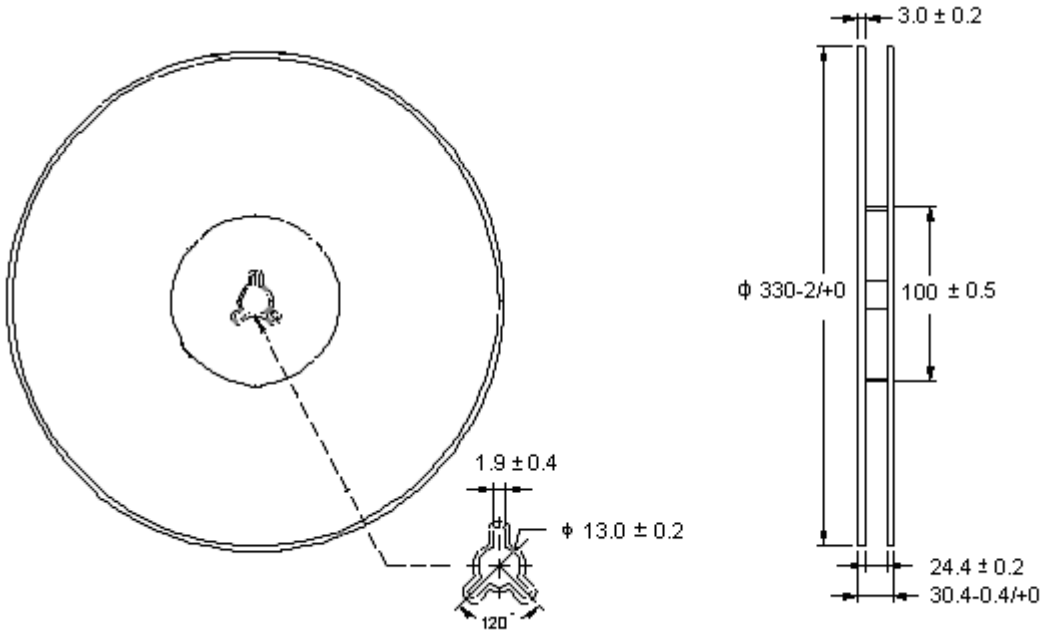
Maximum Drain Current vs Case Temperature



Transient Thermal Response Curves

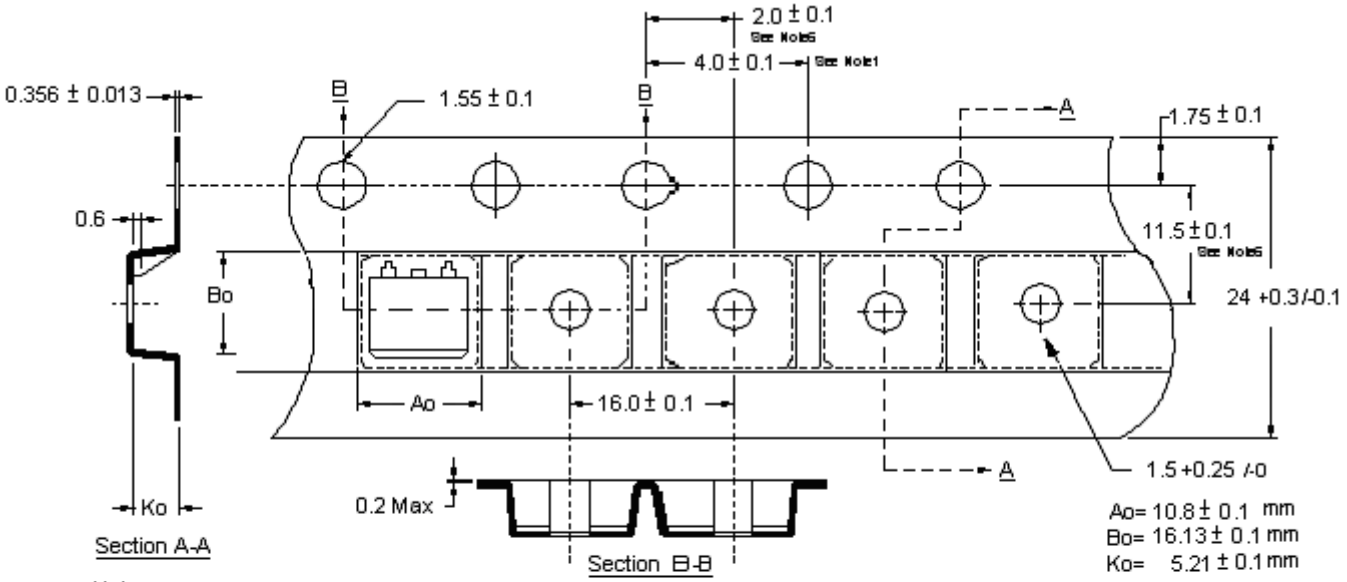


Reel Dimension



Unit: millimeter

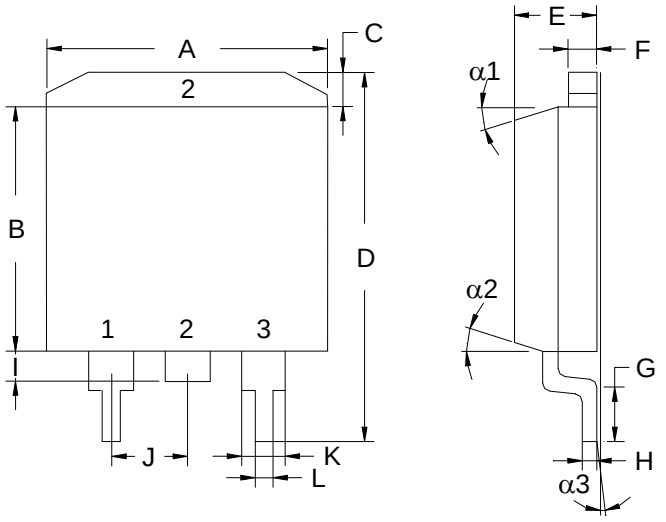
Carrier Tape Dimension



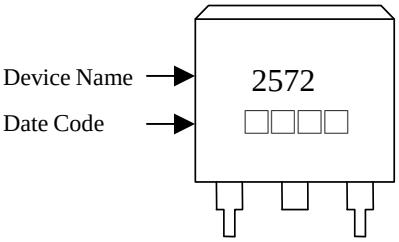
Notes:
1. 10 sprocket hole pitch cumulative tolerace ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material: Conductive Black Advantek Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

TO-263 Dimension



Marking :



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

3-Lead Plastic Surface Mounted Package
Package Code : F3

*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.3800	0.4050	9.65	10.29	I	0.0500	0.0700	1.27	1.78
B	0.3300	0.3700	8.38	9.40	J	-	*0.1000	-	*2.54
C	-	0.0550	-	1.40	K	0.0450	0.0550	1.14	1.40
D	0.5750	0.6250	14.61	15.88	L	0.0200	0.0390	0.51	0.99
E	0.1760	0.1839	4.47	4.67	α1	-	-	6°	8°
F	0.0450	0.0550	1.14	1.40	α2	-	-	6°	8°
G	0.0900	0.1100	2.29	2.79	α3	-	-	0°	5°
H	0.0180	0.0290	0.46	0.74					