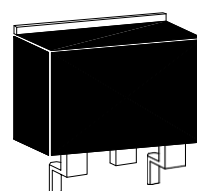


N-Channel Enhancement Mode Power MOSFET

Features:

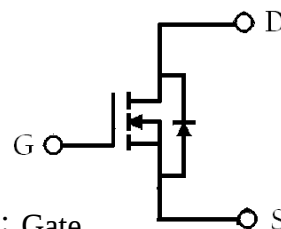
- Low Gate Charge
- Simple Drive Requirement
- Repetitive Avalanche Rated
- Fast Switching Characteristic
- RoHS compliant package

TO-263



G D S

BV _{DSS}		100V
I _D @ V _{GS} =10V, T _C =25°C		50A
R _{DS(on)(TYP)}	V _{GS} =10V, I _D =30A	19mΩ
	V _{GS} =5V, I _D =20A	20mΩ



G : Gate
D : Drain
S : Source

Ordering Information

Device	Package	Shipping
KUN2510	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}	100	V
Gate-Source Voltage	V _{GS}	±20	
Continuous Drain Current @ T _C =25°C, V _{GS} =10V	I _D	50	A
Continuous Drain Current @ T _C =100°C, V _{GS} =10V		35	
Pulsed Drain Current (Note 1)	I _{DM}	150	
Avalanche Current	I _{AS}	30	mJ
Avalanche Energy @ L=0.1mH, I _D =30A, R _G =25Ω	E _{AS}	45	
Repetitive Avalanche Energy @ L=0.05mH (Note 2)	E _{AR}	22.5	
Power Dissipation	T _C =25°C T _C =100°C	P _D	W
Operating Junction and Storage Temperature	T _J , T _{stg}	-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}	1.07	°C/W
Thermal Resistance, Junction-to-ambient, max	R _{th,j-a}	62.5	

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

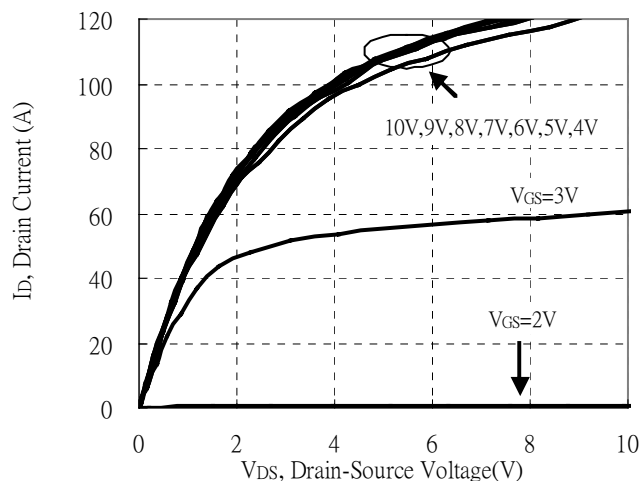
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	100	-	-	V	V _{GS} =0V, I _D =250μA
V _{GS(th)}	1.0	1.4	3.0		V _{DS} = V _{GS} , I _D =250μA
G _{FS}	-	38	-	S	V _{DS} =5V, I _D =30A
I _{GSS}	-	-	±100	nA	V _{GS} =±20V
I _{DSS}	-	-	1	μA	V _{DS} =80V, V _{GS} =0V
	-	-	25		V _{DS} =70V, V _{GS} =0V, T _j =125°C
*R _{DS(ON)}	-	19	30	mΩ	V _{GS} =10V, I _D =30A
	-	20	35		V _{GS} =5V, I _D =20A
Dynamic					
*Q _g	-	24	-	nC	I _D =30A, V _{DS} =50V, V _{GS} =10V
*Q _{gs}	-	6.5	-		
*Q _{gd}	-	8.1	-		
*t _{d(ON)}	-	20	-	ns	V _{DS} =50V, I _D =1A, V _{GS} =10V, R _G =6Ω
*t _r	-	100	-		
*t _{d(OFF)}	-	100	-		
*t _f	-	55	-		
C _{iss}	-	2003	-	pF	V _{GS} =0V, V _{DS} =25V, f=1MHz
C _{oss}	-	218	-		
C _{rss}	-	128	-		

R _g	-	2	-	Ω	V _{GS} =15mV, V _{DS} =0V, f=1MHz
Source-Drain Diode					
*I _S	-	-	50	A	
*I _{SM}	-	-	150		
*V _{SD}	-	-	1.3	V	I _F =I _S , V _{GS} =0V
*t _{rr}	-	120	-	ns	I _F =25A, V _{GS} =0V, dI _F /dt=100A/μs
*Q _{rr}	-	380	-	nC	

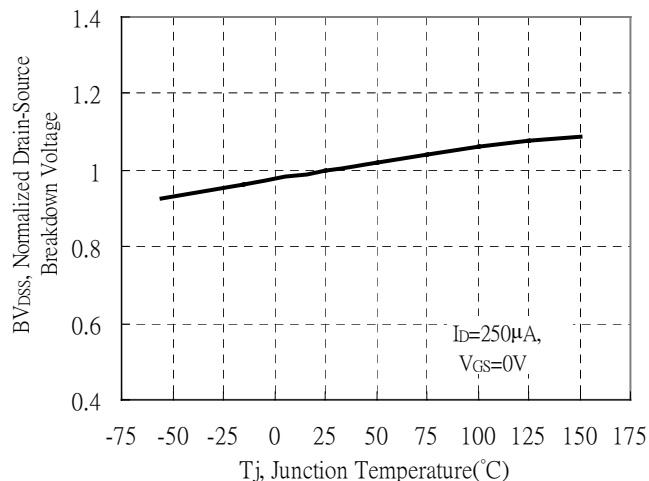
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Typical Characteristics

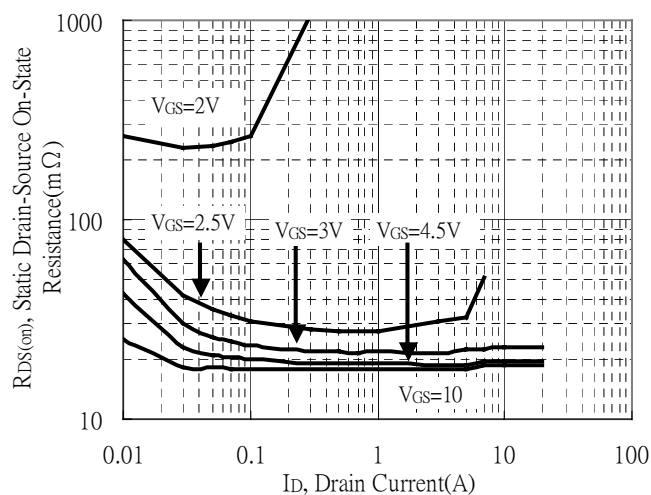
Typical Output Characteristics



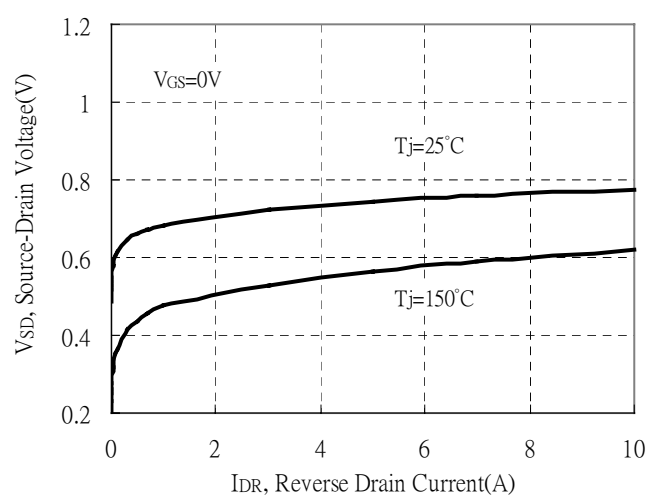
Breakdown Voltage vs Ambient Temperature



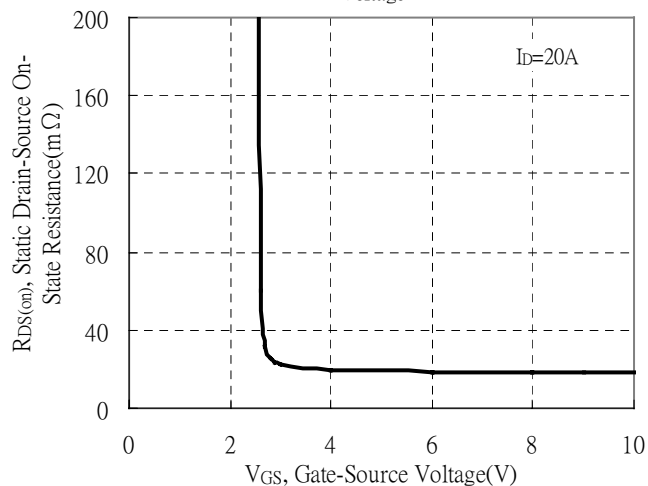
Static Drain-Source On-State resistance vs Drain Current



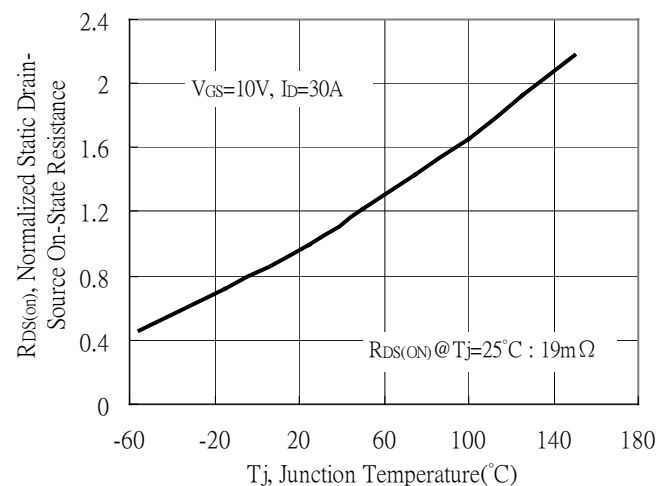
Reverse Drain Current vs Source-Drain Voltage



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

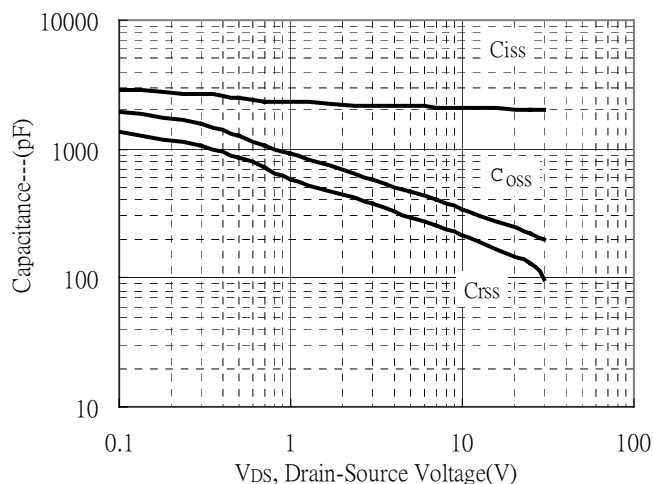


Drain-Source On-State Resistance vs Junction Temperature

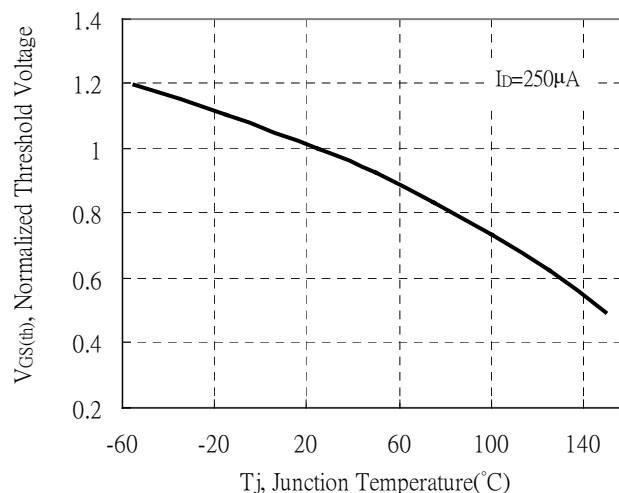


Typical Characteristics (Cont.)

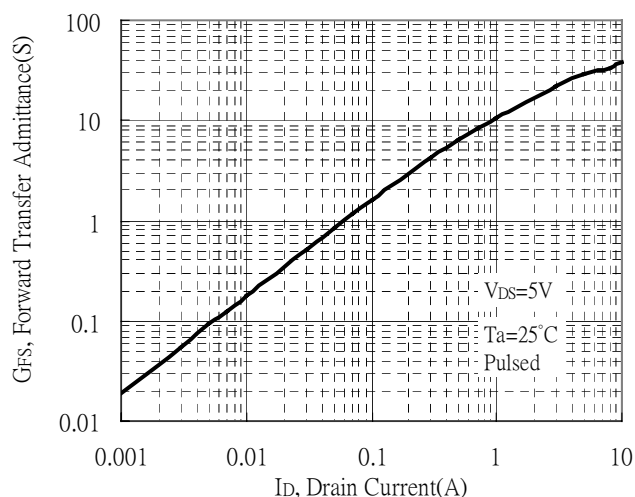
Capacitance vs Drain-to-Source Voltage



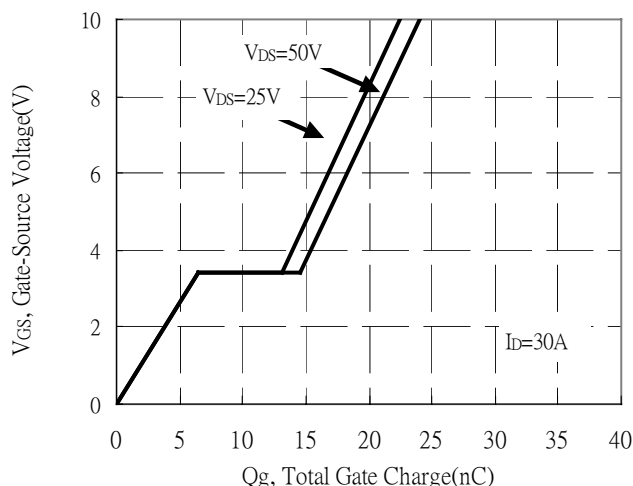
Threshold Voltage vs Junction Temperature



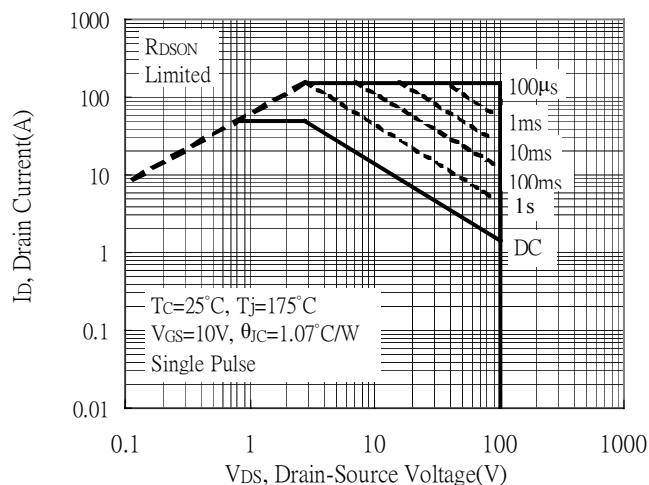
Forward Transfer Admittance vs Drain Current



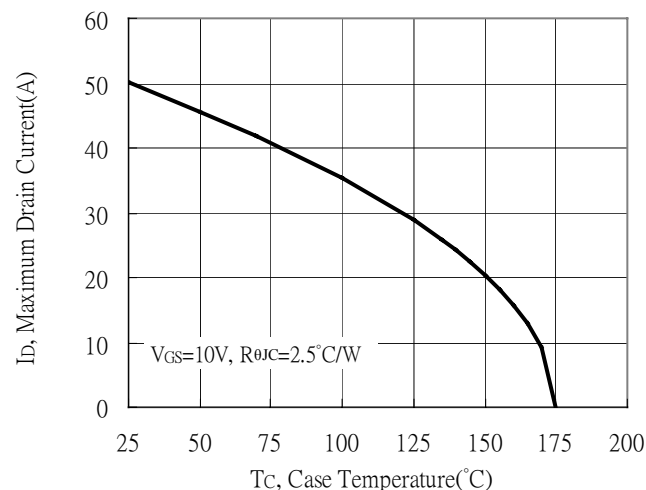
Gate Charge Characteristics



Maximum Safe Operating Area

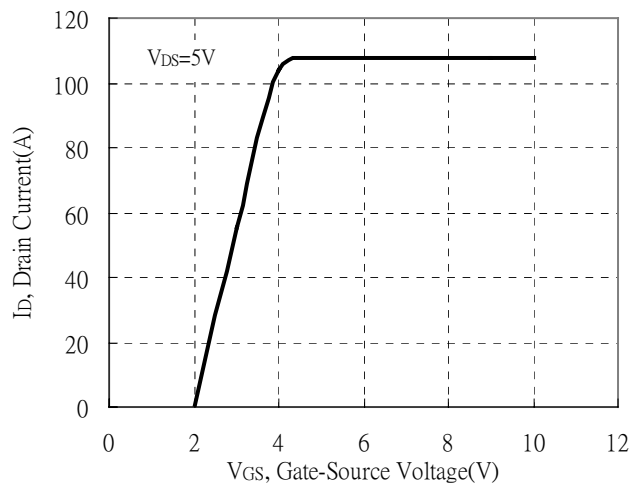


Maximum Drain Current vs Case Temperature

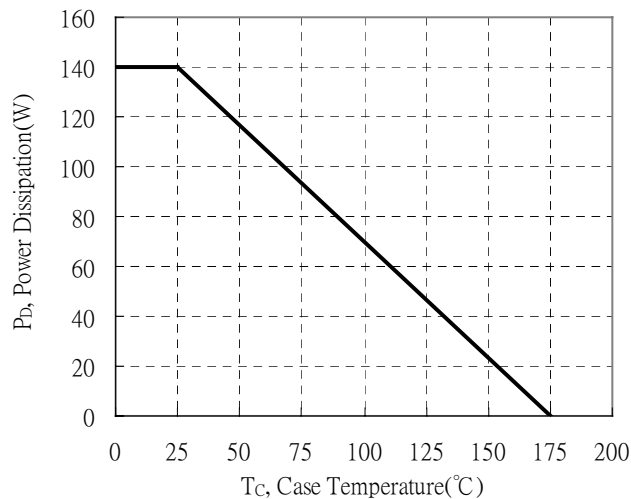


Typical Characteristics (Cont.)

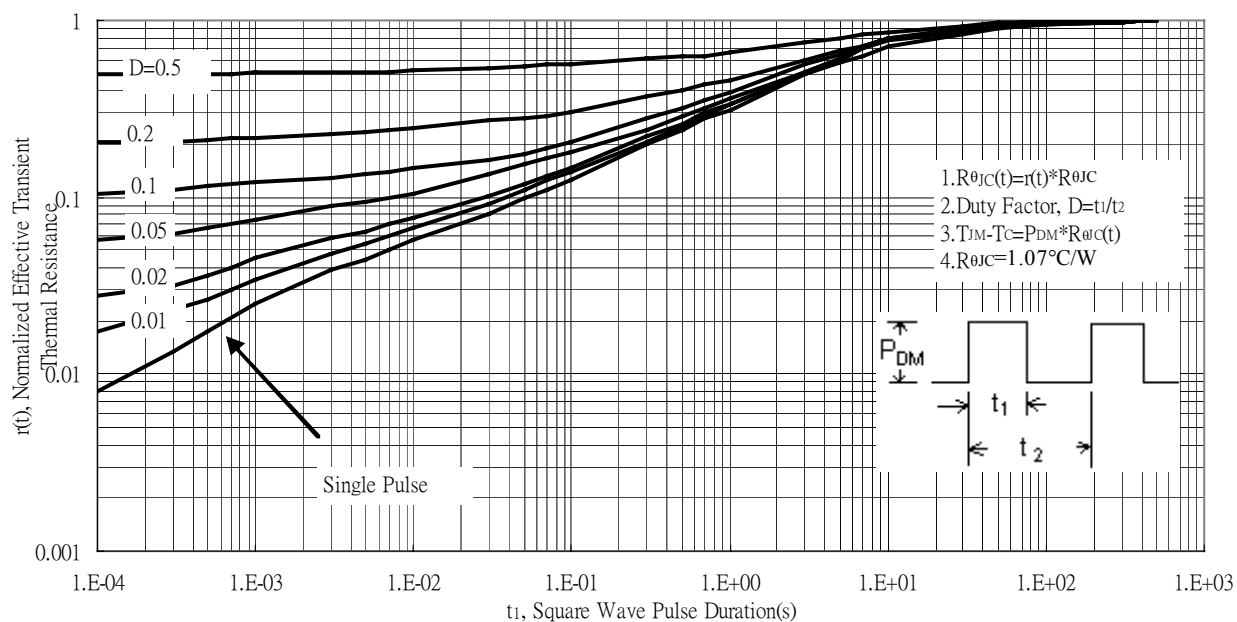
Typical Transfer Characteristics



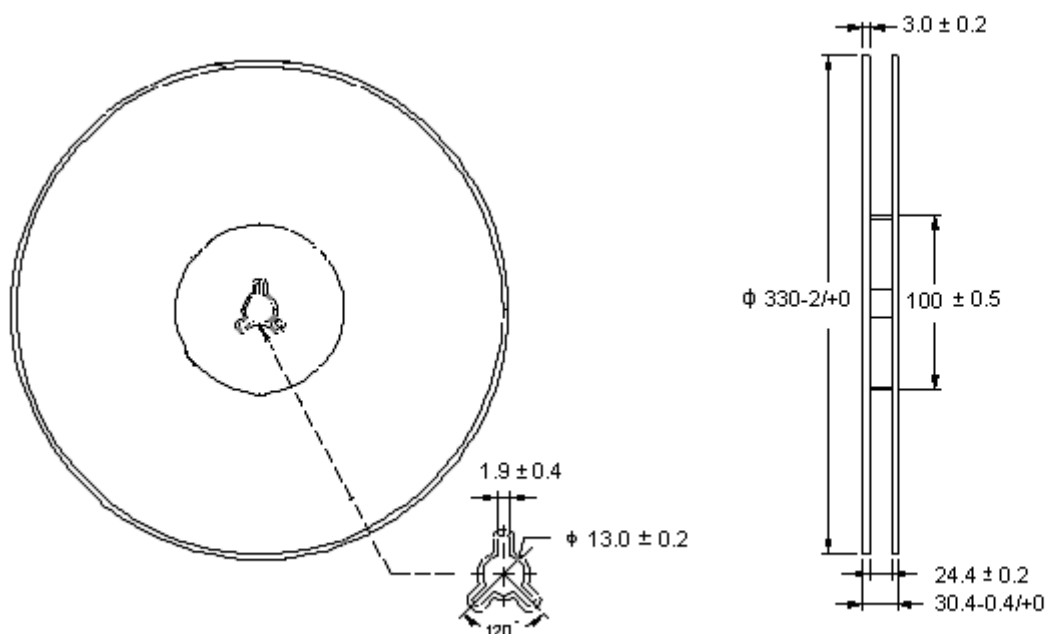
Power Derating Curve



Transient Thermal Response Curves

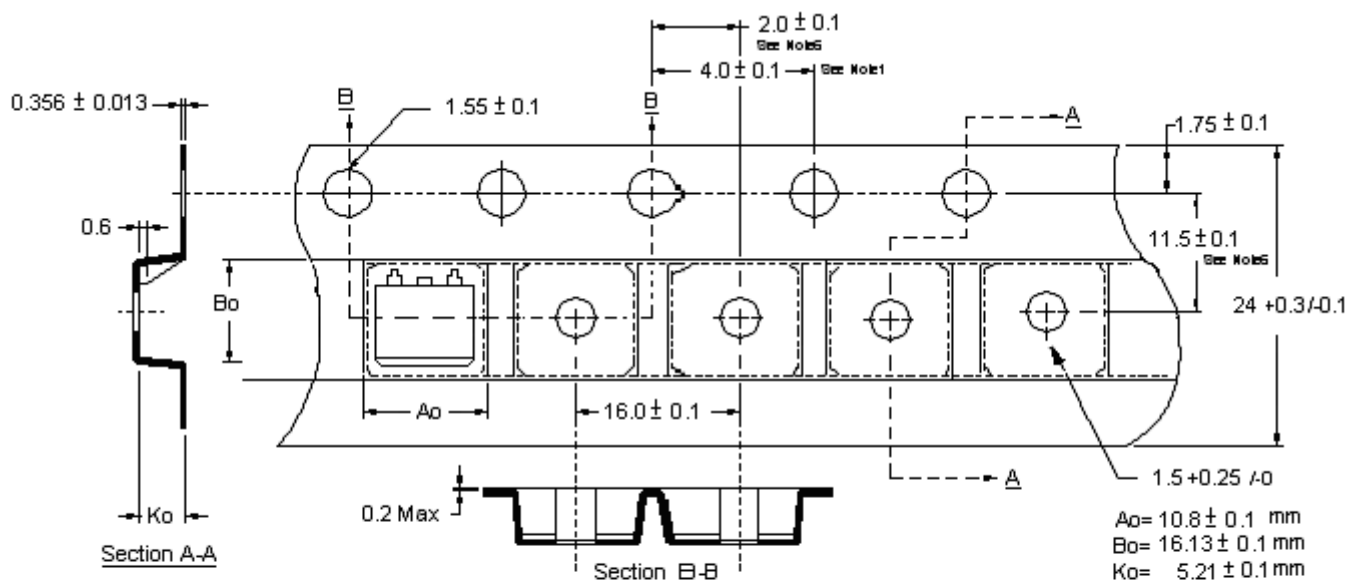


Reel Dimension



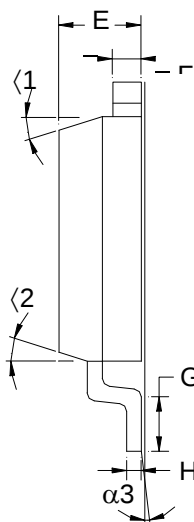
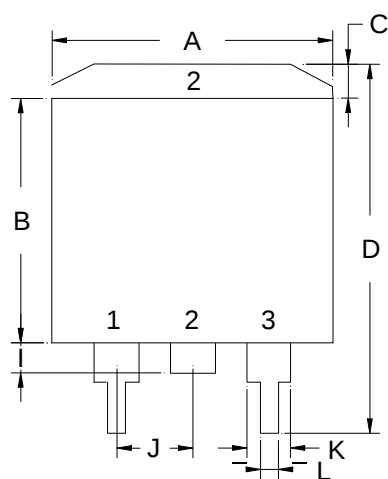
Unit: millimeter

Carrier Tape Dimension

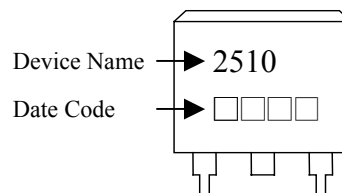


Unit : millimeter

TO-263 Dimension



Marking :



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

3-Lead Plastic Surface Mounted Package

Date Code : (Beginning from left to right)

First Code : Year code, the last digit of Christinr year. For example, 2014→4, 2015→, 2016→6, ..., etc.

Second 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

Third and fourth codes : production serial number, 01~99

*: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					