

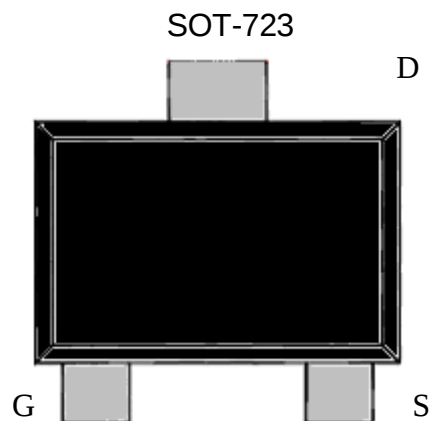
ESD protected N-Channel Enhancement Mode MOSFET

Description:

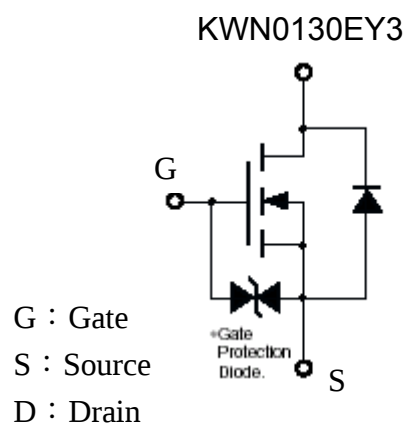
- Low voltage drive(2.5V drive) makes this device ideal for portable equipment.
- High speed switching
- ESD protected device
- Pb-free lead plating & halogen-free package

BV _{DSS}	30V
I _D	100mA
R _{DS(on)} @4V	3.4Ω (TYP)
R _{DS(on)} @2.5V	6.9Ω (TYP)

Outline



Symbol



Ordering Information

Device	Package	Shipping
KWN0130EY3	SOT-723 (Pb-free lead plating and halogen-free package)	8000 pcs / Tape & Reel

Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		BV _{DSS}	30	V
Gate-Source Voltage		V _{GS}	±20	V
Drain Current	Continuous	I _D	±100	mA
	Pulsed	I _{DP}	±200 *1	mA
Reverse Drain Current	Continuous	I _{DR}	±100	mA
	Pulsed	I _{DRP}	±200 *1	mA
Total Power Dissipation		P _D	150 *2	mW
ESD susceptibility			750 *3	V
Operating Junction and Storage Temperature Range		T _j ; T _{stg}	-55~+150	°C
Thermal Resistance, Junction-to-Ambient		R _{th,ja}	833	°C/W

Note : *1. Pulse Width ≤ 10μs, Duty cycle ≤1%

*2. With each pin mounted on the recommended lands.

*3. Human body model, 1.5kΩ in series with 100pF

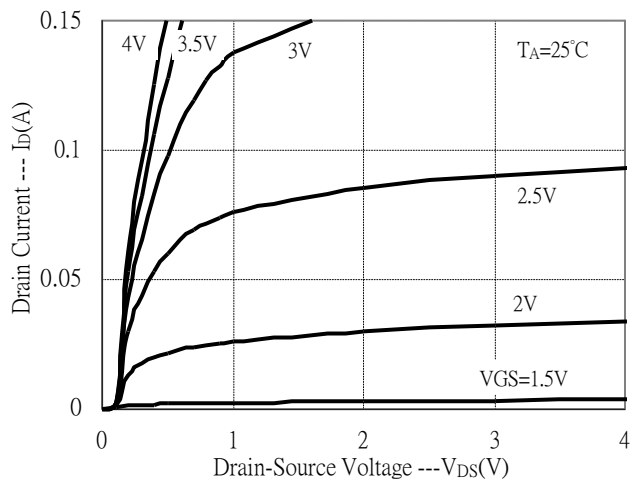
Electrical Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	30	-	-	V	V _{GS} =0, I _D =100μA
V _{GS(th)}	0.8	1.3	1.5	V	V _{DS} =3V, I _D =100μA
I _{GSS}	-	-	±1	μA	V _{GS} =±20V, V _{DS} =0
I _{DSS}	-	-	100	nA	V _{DS} =30V, V _{GS} =0
R _{DS(ON)}	-	3.4	8	⌒	V _{GS} =4V, I _D =10mA
	-	6.9	13		V _{GS} =2.5V, I _D =1mA
G _{FS}	20	50	-	mS	V _{DS} =3V, I _D =10mA
Dynamic					
C _{iss}	-	12.5	-	pF	V _{DS} =5V, V _{GS} =0, f=1MHz
C _{oss}	-	7.3	-		
C _{rss}	-	3.5	-		
t _{d(on)}	-	15	-	ns	V _{DD} ≐5V, I _D =10mA, V _{GS} =5V, R _L =500Ω , R _G =10Ω
t _r	-	35	-		
t _{d(off)}	-	75	-		
t _f	-	75	-		
Source-Drain Diode					
*V _{SD}	-	0.88	1.2	V	V _{GS} =0V, I _S =100mA

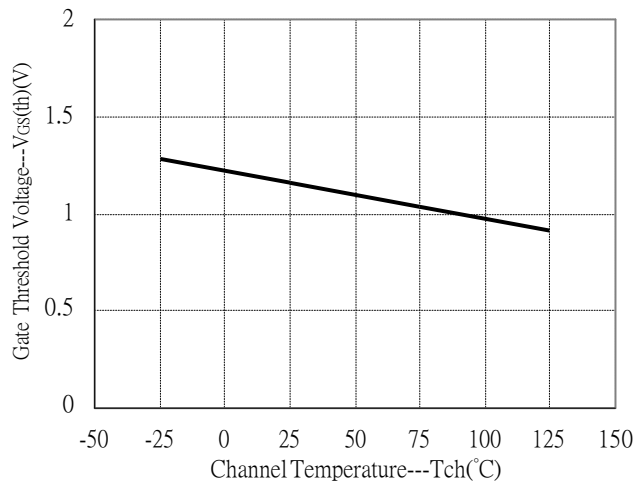
*Pulse Test : Pulse Width ≤300μs, Duty Cycle ≤2%

Typical Characteristics

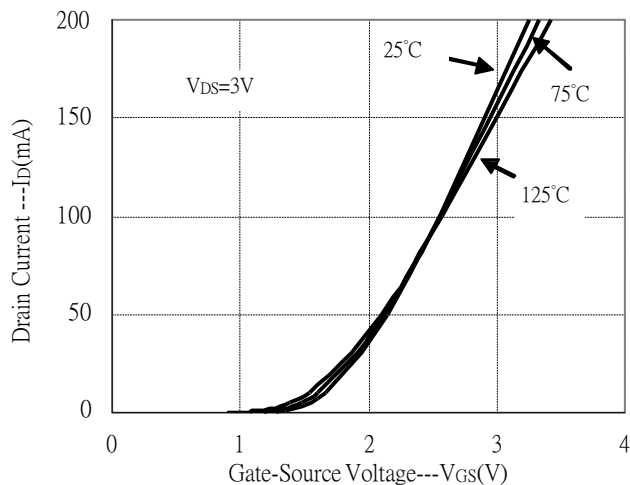
Typical Output Characteristics



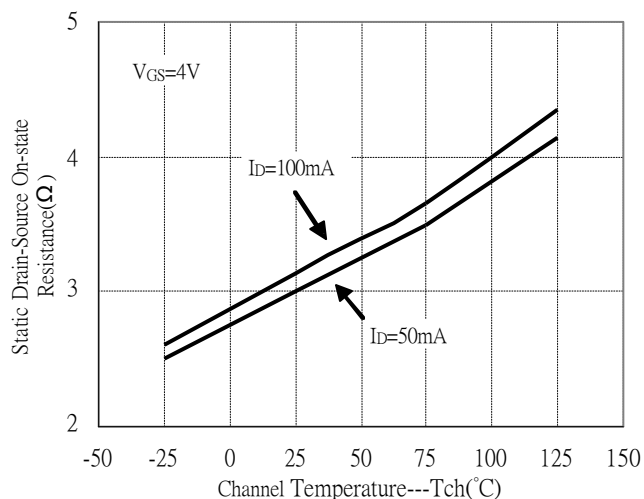
Gate Threshold Voltage vs Channel Temperature



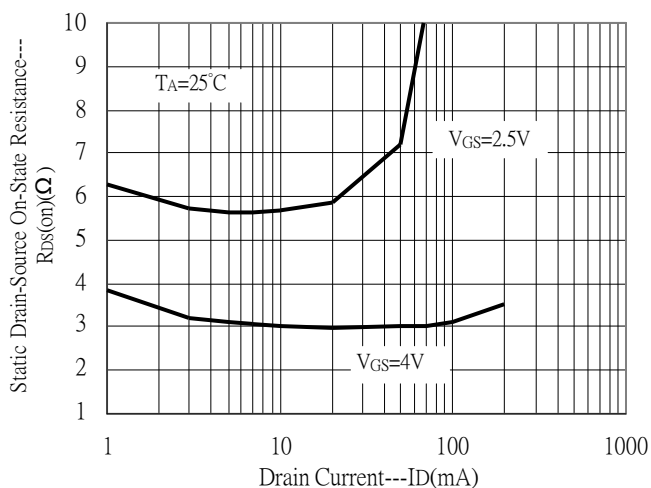
Typical Transfer Characteristics



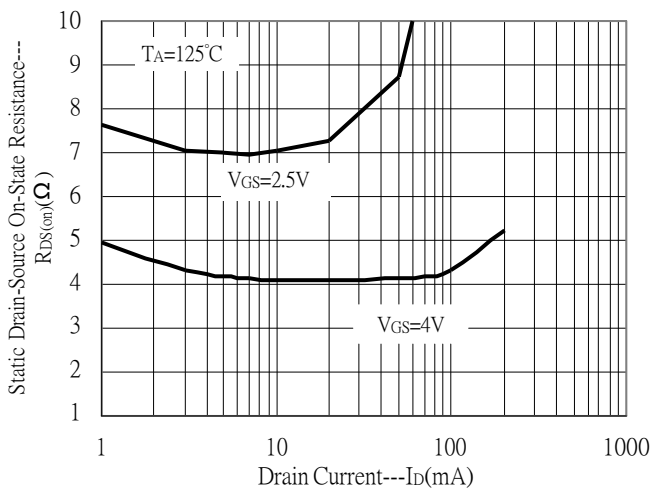
Static Drain-Source On-state Resistance with Temperature



Static Drain-Source On-State resistance vs Drain Current

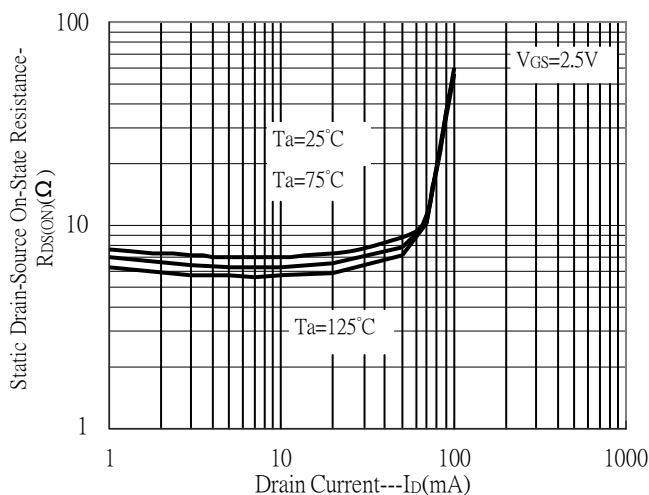


Static Drain-Source On-State resistance vs Drain Current

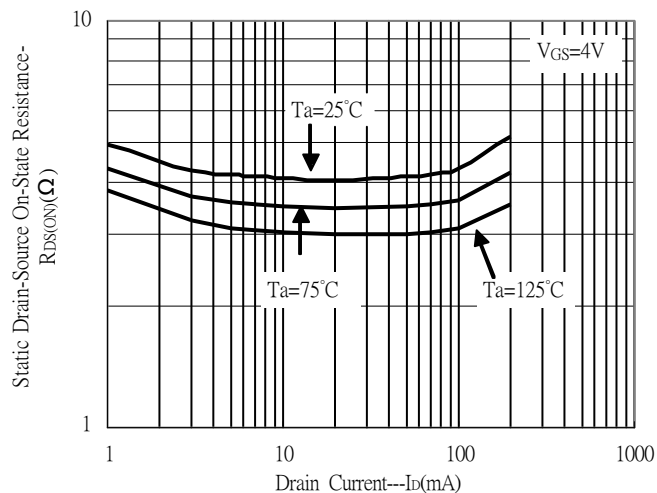


Typical Characteristics(Cont.)

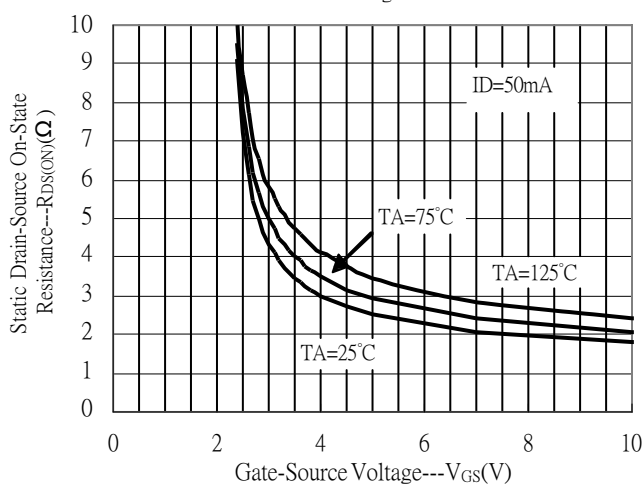
Static Drain-Source On-State Resistance vs Drain Current



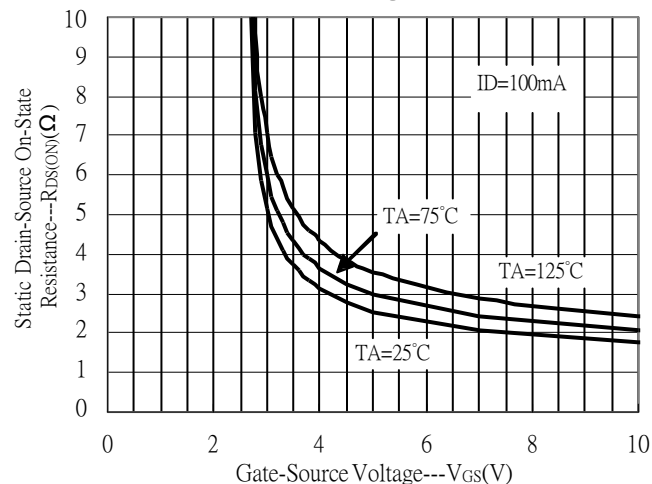
Static Drain-Source On-State Resistance vs Drain Current



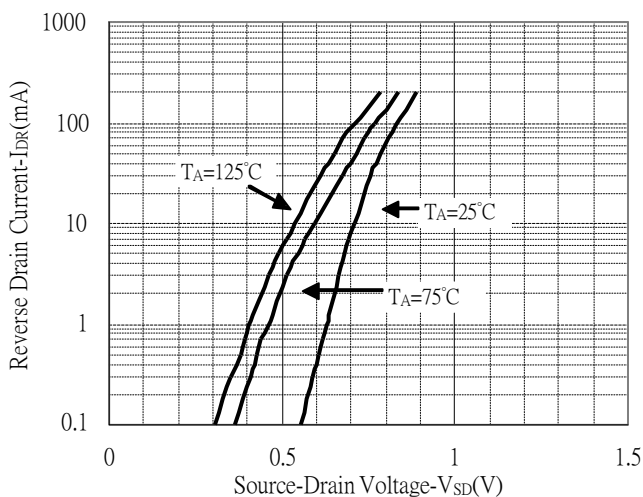
Static Drain-Source On-State Resistance vs Gate-Source Voltage



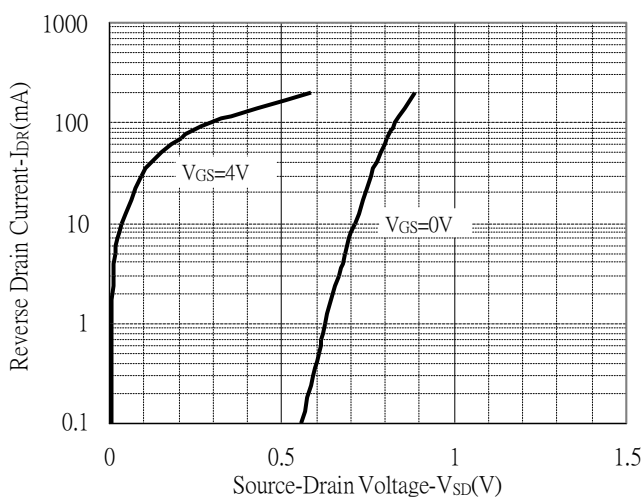
Static Drain-Source On-State Resistance vs Gate-Source Voltage



Reverse Drain Current vs Source-Drain Voltage(I)

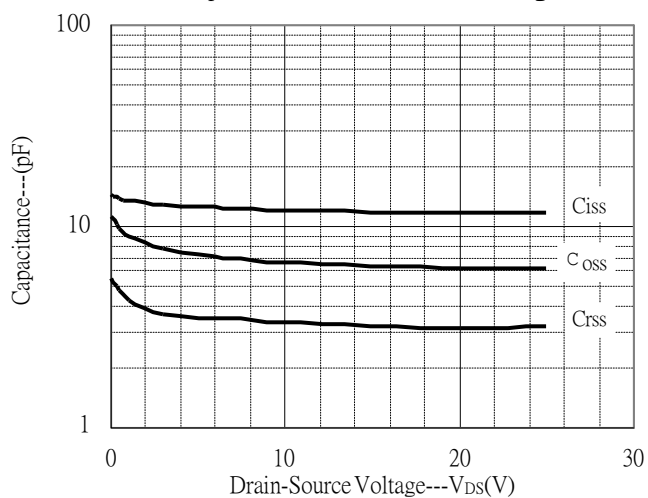


Reverse Drain Current vs Source-Drain Voltage(II)

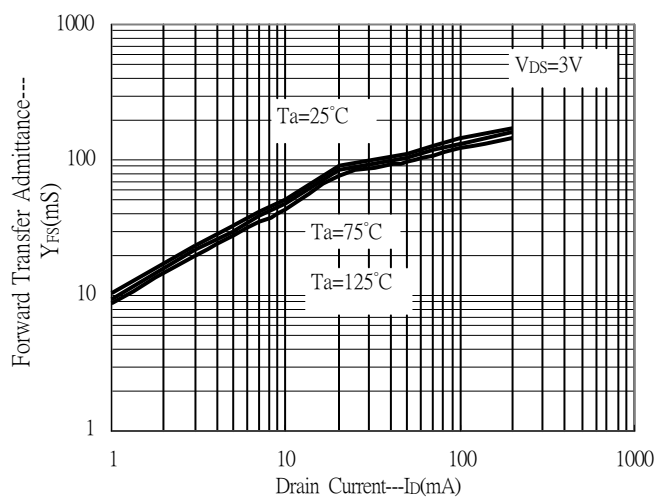


Typical Characteristics(Cont.)

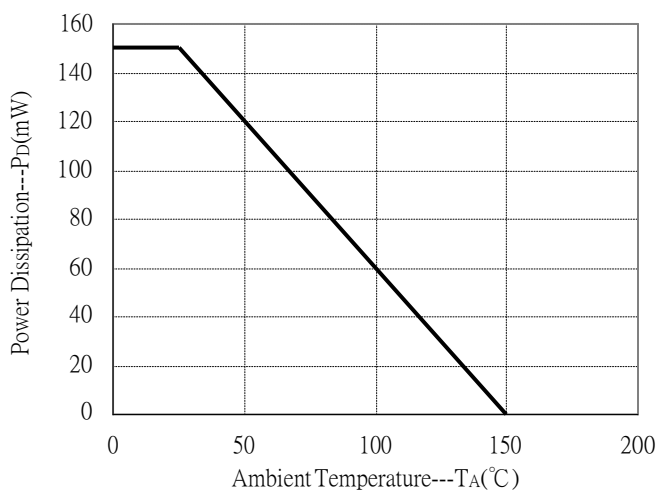
Capacitance vs Drain-to-Source Voltage



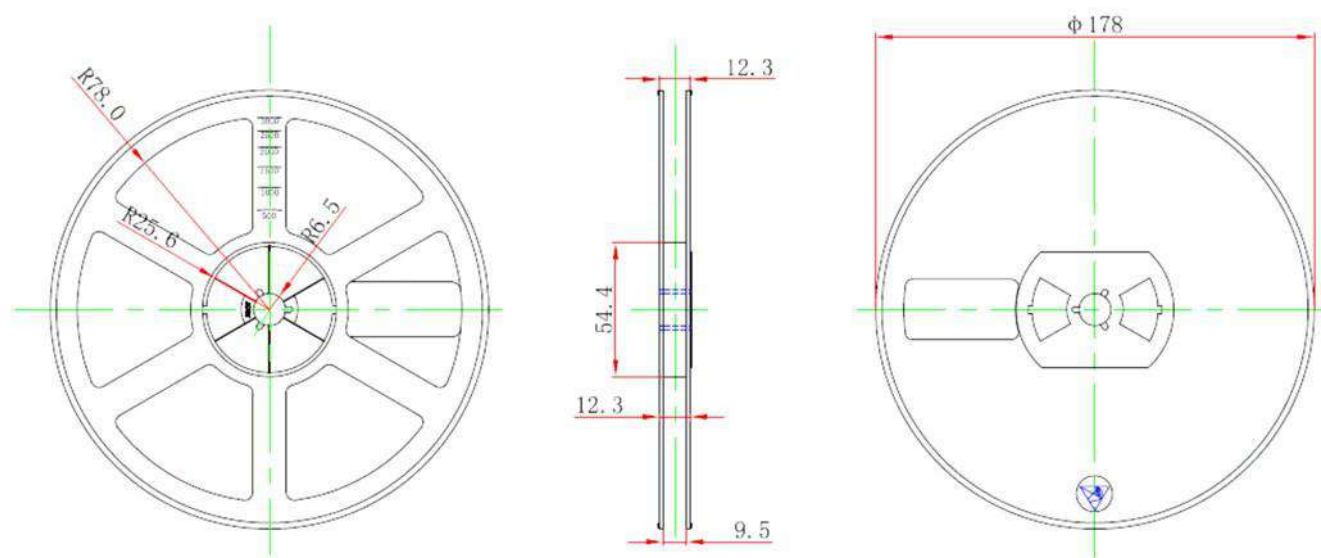
Forward Transfer Admittance vs Drain Current



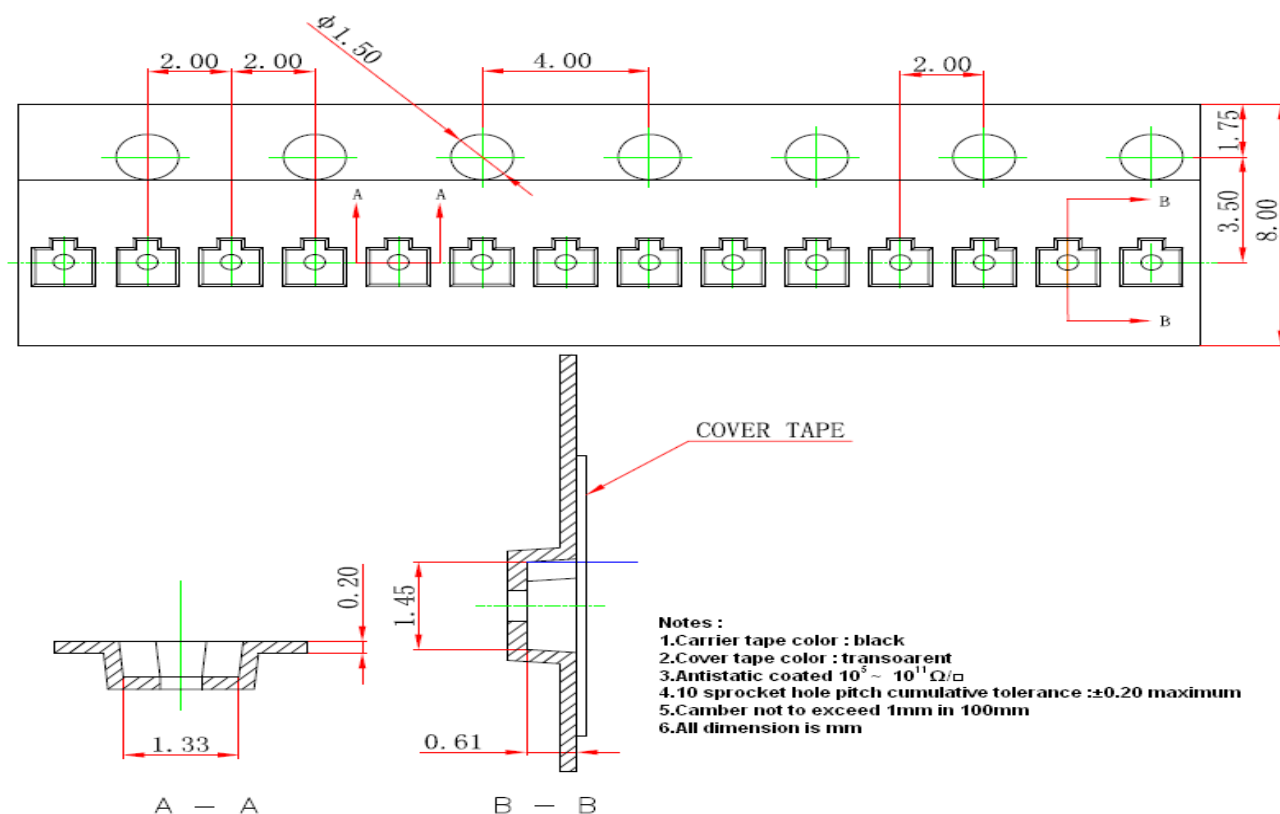
Power Derating Curve



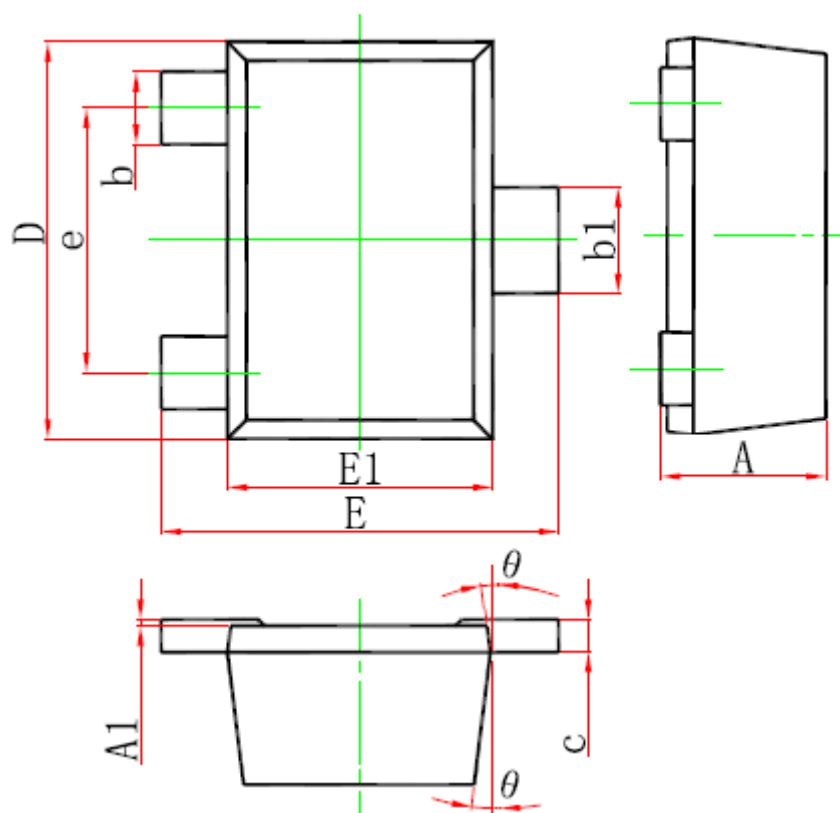
Reel Dimension



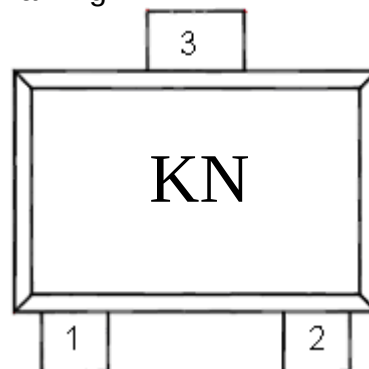
Carrier Tape Dimension



SOT-723 Dimension



Marking:



3-Lead SOT-723 Plastic
Surface Mounted Package
Package Code: Y3

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

*Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.000	0.500	0.000	0.020	D	1.150	1.250	0.045	0.049
A1	0.000	0.050	0.000	0.002	E	1.150	1.250	0.045	0.049
b	0.170	0.270	0.007	0.011	E1	0.750	0.850	0.030	0.033
b1	0.270	0.370	0.011	0.015	e	0.800*		0.031*	
c	0.000	0.150	0.000	0.006	θ	7° REF		7° REF	