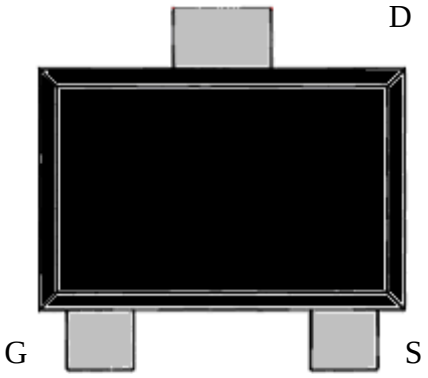
ESD protected N-CHANNEL MOSFET

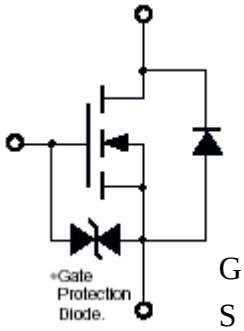
Description:

- Low voltage drive, 1.8V.
- Easy to use in parallel.
- High speed switching.
- ESD protected device.
- Pb-free lead plating and halogen-free package.

SOT-723



BV_{DSS}	20V
I_D@V_{GS}=4.5V, T_A=25°C	255mA
R_{DSON}@V_{GS}=4.5V, I_D=255mA	1.7Ω (typ.)
R_{DSON}@V_{GS}=2.5V, I_D=20mA	2.2Ω (typ.)
R_{DSON}@V_{GS}=1.8V, I_D=20mA	3.5Ω (typ.)
R_{DSON}@V_{GS}=1.6V, I_D=20mA	4.1Ω (typ.)



G：Gate
S：Source
D：Drain

Ordering Information

Device	Package	Shipping
KWNK3	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}	20		V
Gate-Source Voltage	V_{GS}	±8		
Continuous Drain Current @V_{GS}=4.5V, T_A=25°C	I_D	255	*2	mA
		210	*3	
Pulsed Drain Current	I_{DM}	400	*1	
Total Power Dissipation	P_D	440	*2	mW
		310	*3	
ESD susceptibility		350	*4	V
Operating Junction and Storage Temperature Range	Tj ; Tstg	-55~+150		°C
Thermal Resistance, Junction-to-Ambient	Rth,ja	280	*2	°C/W
		400	*3	

Note : *1. Pulse Width ≤ 300μs, Duty cycle ≤2%.
*2. When device mounted on FR-4 board with 1 sq inch pad size.
*3. When device mounted on FR-4 board with minimum pad size.
*4. Human body model, 1.5kΩ in series with 100pF.

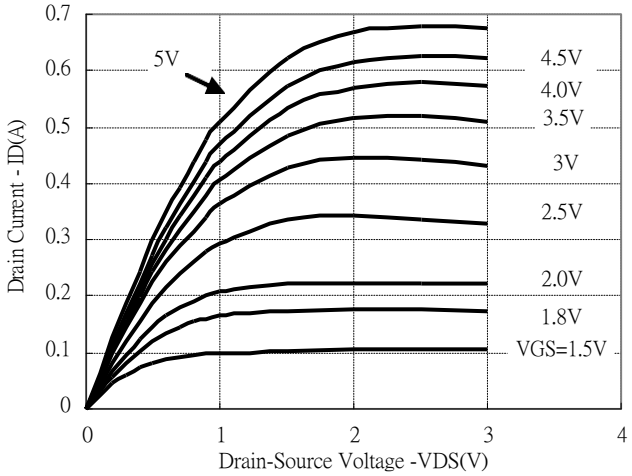
Electrical Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	20	-	-	V	V_{GS}=0V, I_D=100μA
$V_{GS(th)}$	0.5	-	1.0		V_{DS}=V_{GS}, I_D=250μA
I_{GSS}	-	-	±1	μA	V_{GS}=±8V, V_{DS}=0V
I_{DSS}	-	-	500	nA	V_{DS}=20V, V_{GS}=0V
$R_{DS(ON)}$	-	1.7	3	Ω	V_{GS}=4.5V, I_D=255mA
	-	2.2	4.5		V_{GS}=2.5V, I_D=20mA
	-	3.5	6		V_{GS}=1.8V, I_D=20mA
	-	4.1	7		V_{GS}=1.6V, I_D=20mA
G_{FS}	100	-	-	mS	V_{DS}=5V, I_D=100mA
Dynamic					
C_{iss}	-	23	50	pF	V_{DS}=10V, V_{GS}=0V, f=1MHz
C_{oss}	-	7.7	25		
C_{rss}	-	5.8	12		
Source-Drain Diode					
*V_{SD}	-	-	1	V	V_{GS}=0V, I_S=10mA

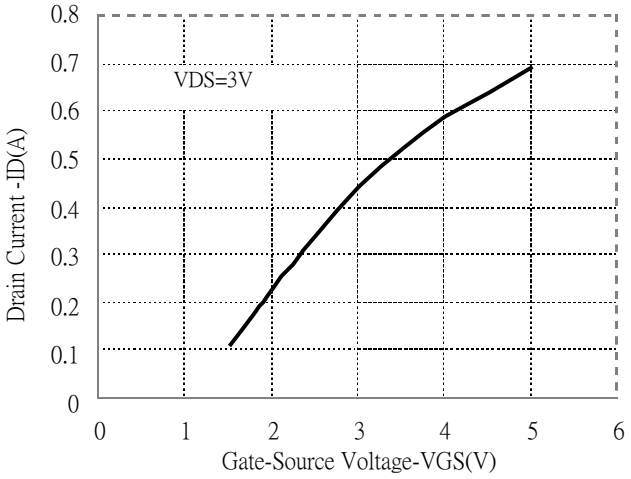
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Typical Characteristics

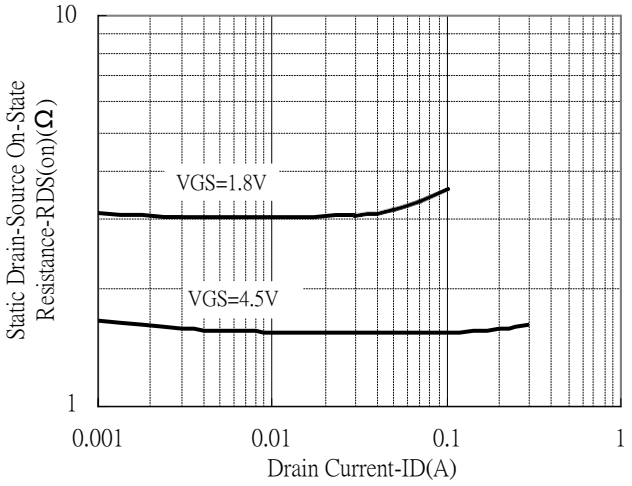
Typical Output Characteristics



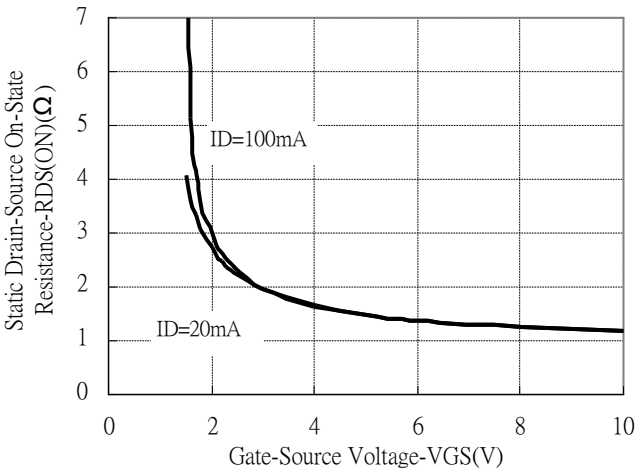
Typical Transfer Characteristics



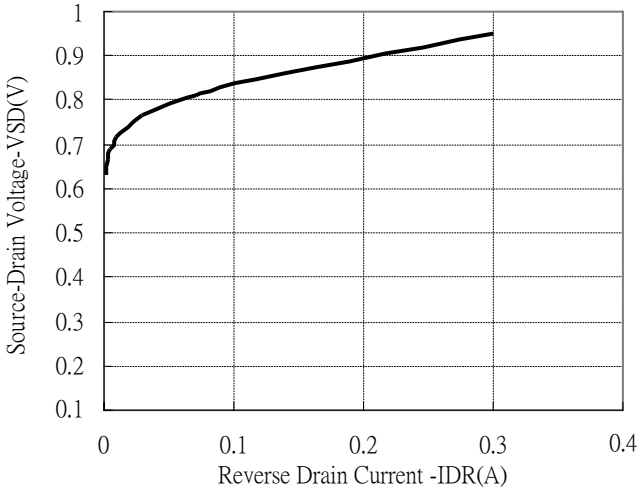
Static Drain-Source On-State resistance vs Drain Current



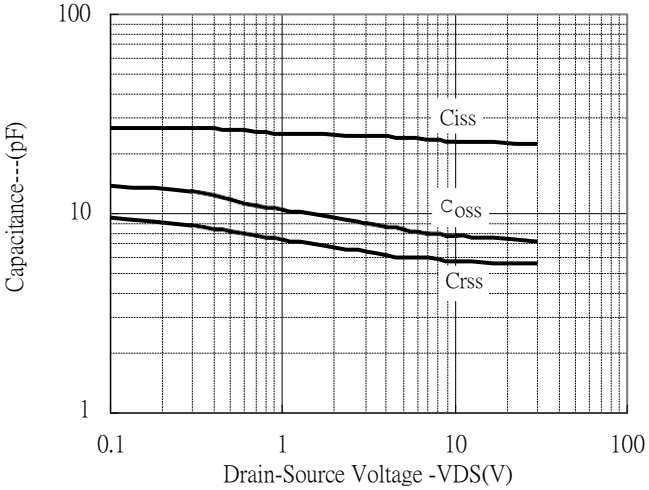
Static Drain-Source On-State Resistance vs Gate-Source Voltage



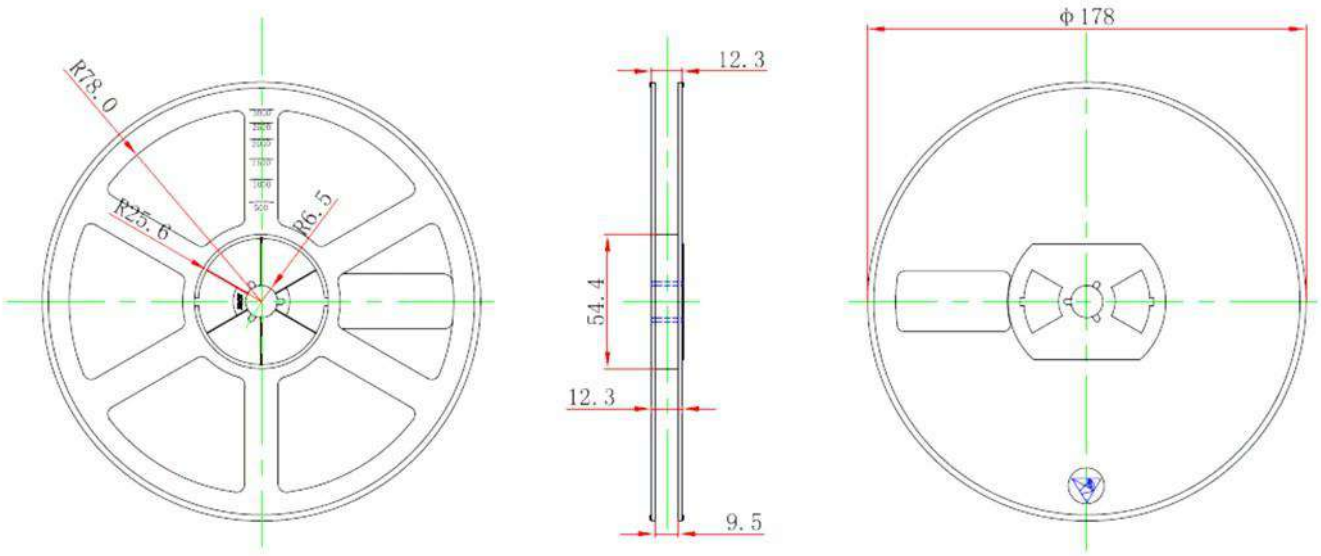
Reverse Drain Current vs Source-Drain Voltage



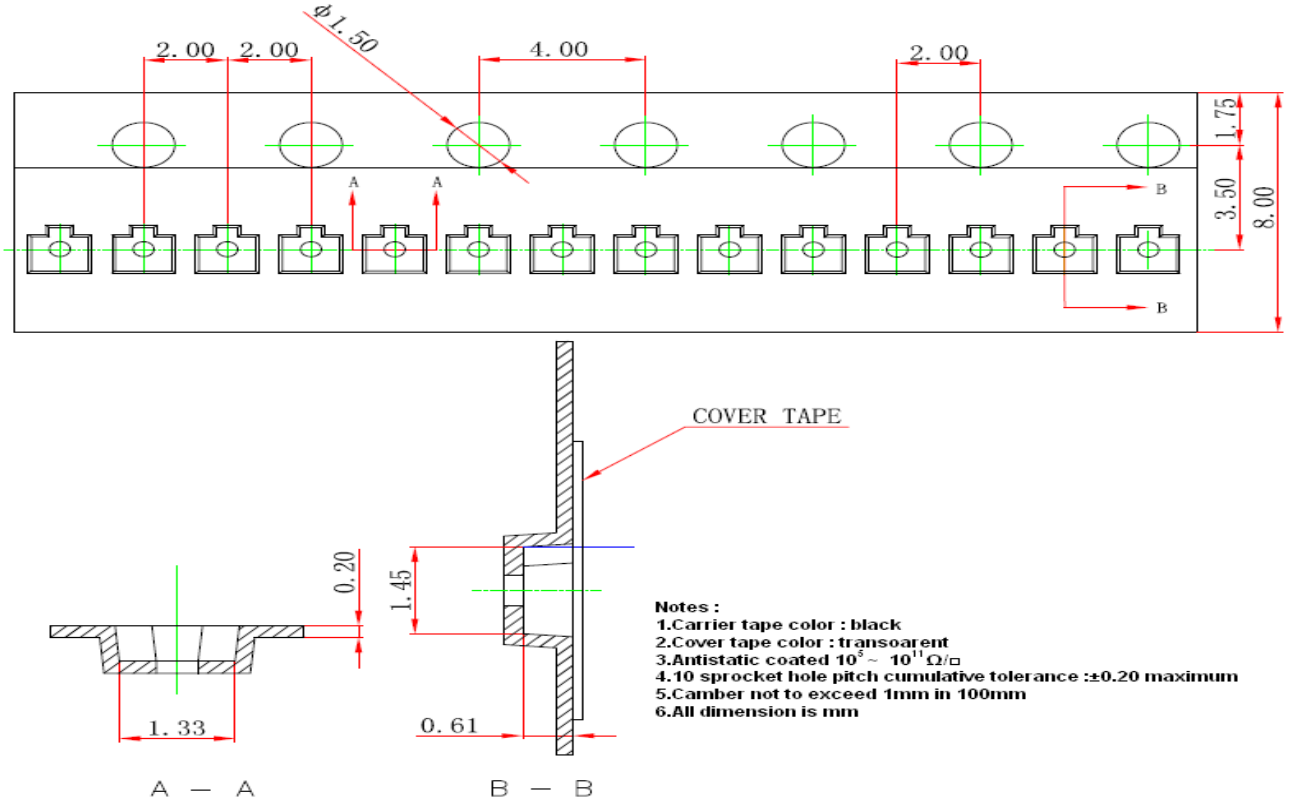
Capacitance vs Drain-to-Source Voltage



Reel Dimension

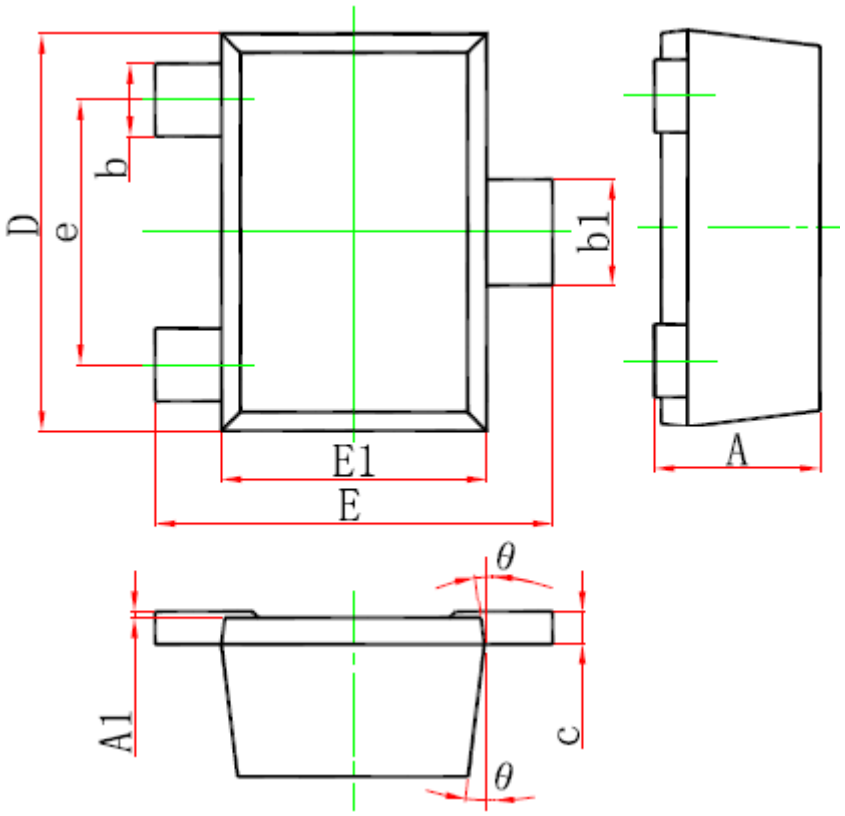


Carrier Tape Dimension

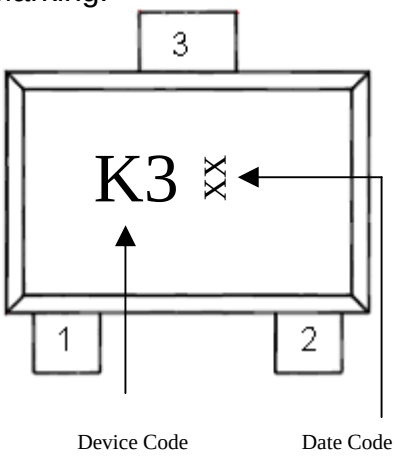


Notes :
1.Carrier tape color : black
2.Cover tape color : transoarent
3.Antistatic coated 10^{5} ~ 10^{11} Ω/□
4.10 sprocket hole pitch cumulative tolerance :±0.20 maximum
5.Camber not to exceed 1mm in 100mm
6.All dimension is mm

SOT-723 Dimension



Marking:



3-Lead SOT-723 Plastic
Surface Mounted Package

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	