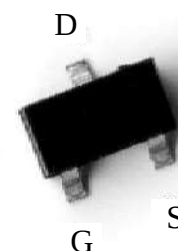


20V N-Channel Logic Level Enhancement Mode MOSFET

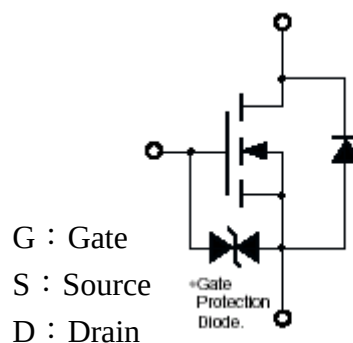
Features:

- $V_{DS}=20V$
 $R_{DS(ON)}=30m\Omega @ V_{GS}=4.5V, I_D=5A$
 $R_{DS(ON)}=40m\Omega @ V_{GS}=2.5V, I_D=2.6A$
- Low on-resistance
- Low gate charge
- Excellent thermal and electrical capabilities
- Pb-free lead plating package

SOT-23



BV_{DSS}		20V
I_D		6A
$R_{DS(ON)(MAX)}$	$V_{GS}=4.5V, I_D=5A$	30m Ω
	$V_{GS}=2.5V, I_D=2.6A$	40m Ω
	$V_{GS}=1.8V, I_D=1A$	60m Ω



Absolute Maximum Ratings ($T_A=25^\circ C$)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current @ $T_A=25^\circ C, V_{GS}=4.5V$ (Note 3)	I_D	6	A
Continuous Drain Current @ $T_A=70^\circ C, V_{GS}=4.5V$ (Note 3)	I_D	4	A
Pulsed Drain Current (Note 1, 2)	I_{DM}	24	A
Maximum Power Dissipation @ $T_A=25^\circ C$	P_D	1.38	W
Linear Derating Factor		0.01	W/ $^\circ C$
ESD susceptibility (Note 4)		2600	V
Thermal Resistance, Junction-to-Ambient (Note 3)	$R_{th,ja}$	90	$^\circ C/W$
Operating Junction and Storage Temperature	T_j, T_{stg}	-55~+150	$^\circ C$

Note : 1. Pulse width limited by maximum junction temperature.

2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

3. Surface mounted on 1 in² copper pad of FR-4 board; 270 $^\circ C/W$ when mounted on minimum copper pad.

4. Human body model, 1.5k Ω in series with 100pF

Electrical Characteristics (Tj=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	20	-	-	V	V _{GS} =0, I _D =250μA
V _{GS(th)}	0.4	-	1.2	V	V _{DS} =V _{GS} , I _D =250μA
G _{FS}	-	13	-	S	V _{DS} =5V, I _D =5A
I _{GSS}	-	-	±10	μA	V _{GS} =±8V, V _{DS} =0
I _{DSS}	-	-	1		V _{DS} =16V, V _{GS} =0
	-	-	25		V _{DS} =16V, V _{GS} =0, T _j =70°C
*R _{DS(ON)}	-	23	30	mΩ	V _{GS} =4.5V, I _D =5A
	-	30	40		V _{GS} =2.5V, I _D =2.6A
	-	45	60		V _{GS} =1.8V, I _D =1A
Dynamic					
C _{iss}	-	474	-	pF	V _{DS} =20V, V _{GS} =0, f=1MHz
C _{oss}	-	77	-		
C _{rss}	-	60	-		
*t _{d(ON)}	-	6	-	ns	V _{DS} =15V, I _D =5A, V _{GS} =4.5V, R _G =3.3Ω , R _D =3Ω
*t _r	-	20	-		
*t _{d(OFF)}	-	20	-		
*t _f	-	3	-		
*Q _g	-	8.5	-	nC	V _{DS} =16V, I _D =5A, V _{GS} =4.5V
*Q _{gs}	-	1.5	-		
*Q _{gd}	-	3.2	-		
Source-Drain Diode					
*V _{SD}	-	-	1.2	V	V _{GS} =0V, I _S =1.2A
*t _{rr}	-	14	-	ns	I _S =5A, V _{GS} =0V, dI/dt=100A/μs
*Q _{rr}	-	7	-	nC	

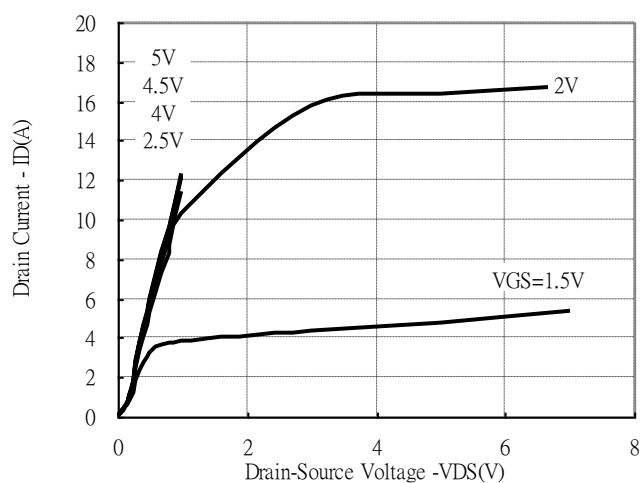
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Ordering Information

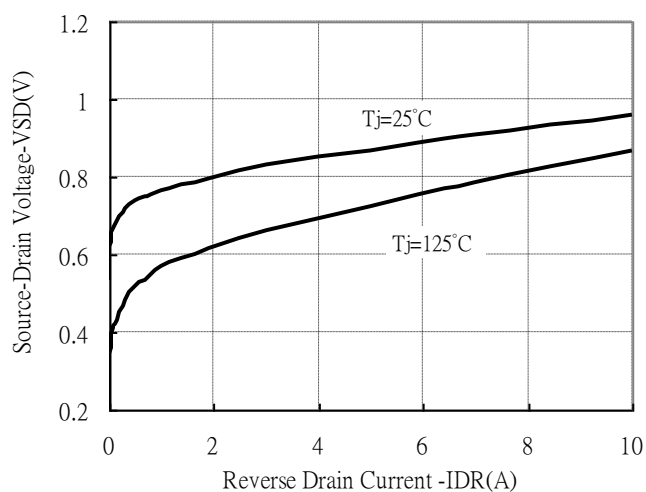
Device	Package	Shipping
KWN2306Z	SOT-23 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

Typical Characteristics

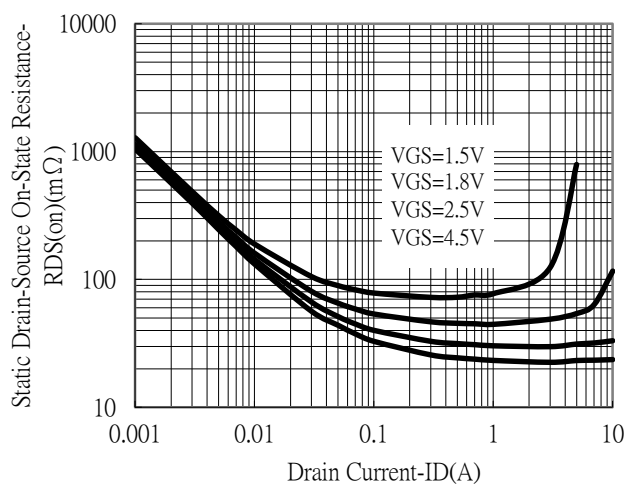
Typical Output Characteristics



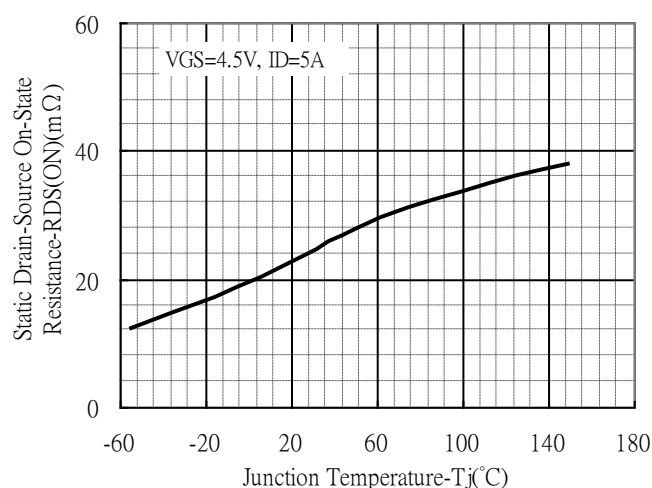
Reverse Drain Current vs Source-Drain Voltage



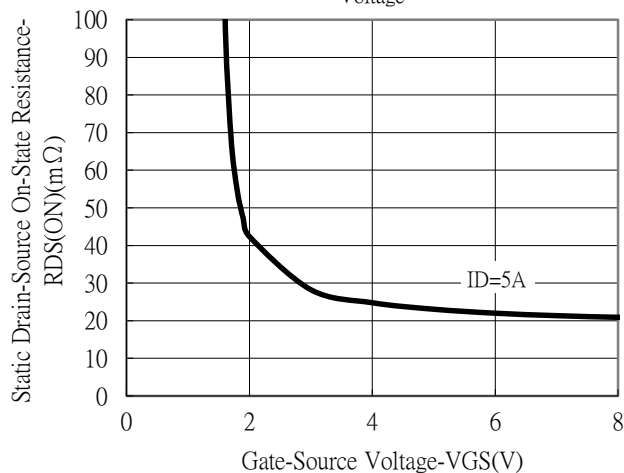
Static Drain-Source On-State resistance vs Drain Current



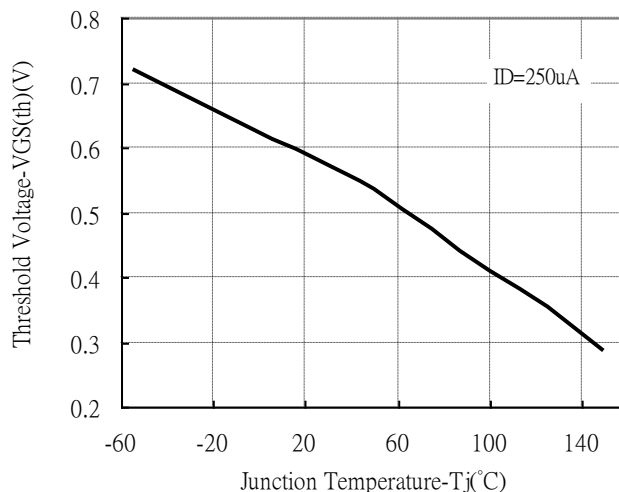
Drain-Source On-State Resistance vs Junction Temperature



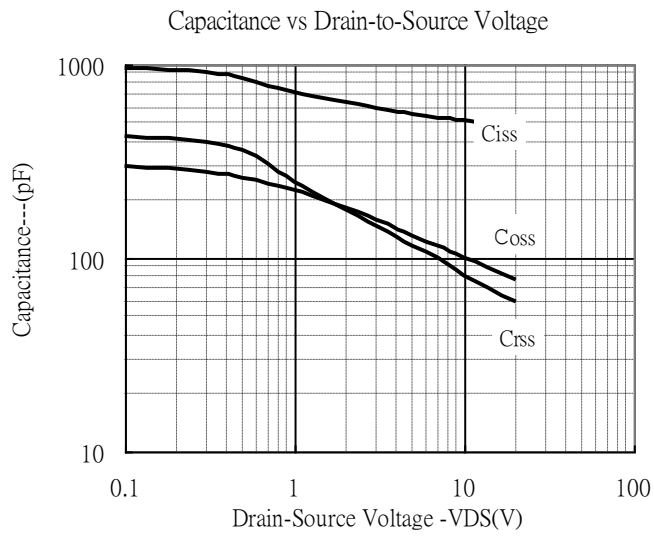
Static Drain-Source On-State Resistance vs Gate-Source Voltage



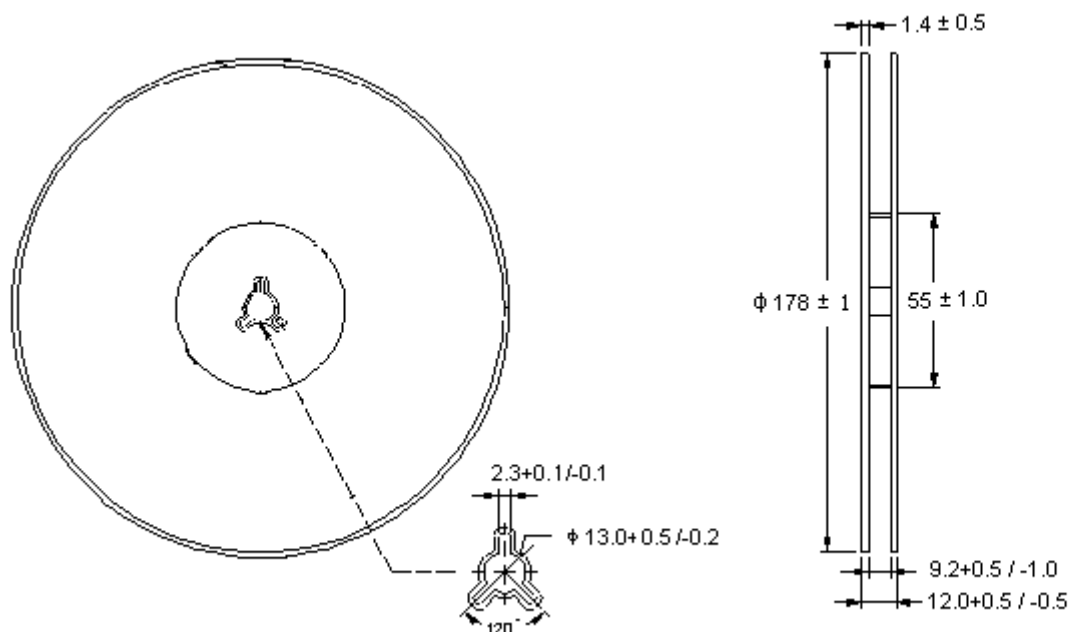
Threshold Voltage vs Junction Temperature



Typical Characteristics(Cont.)

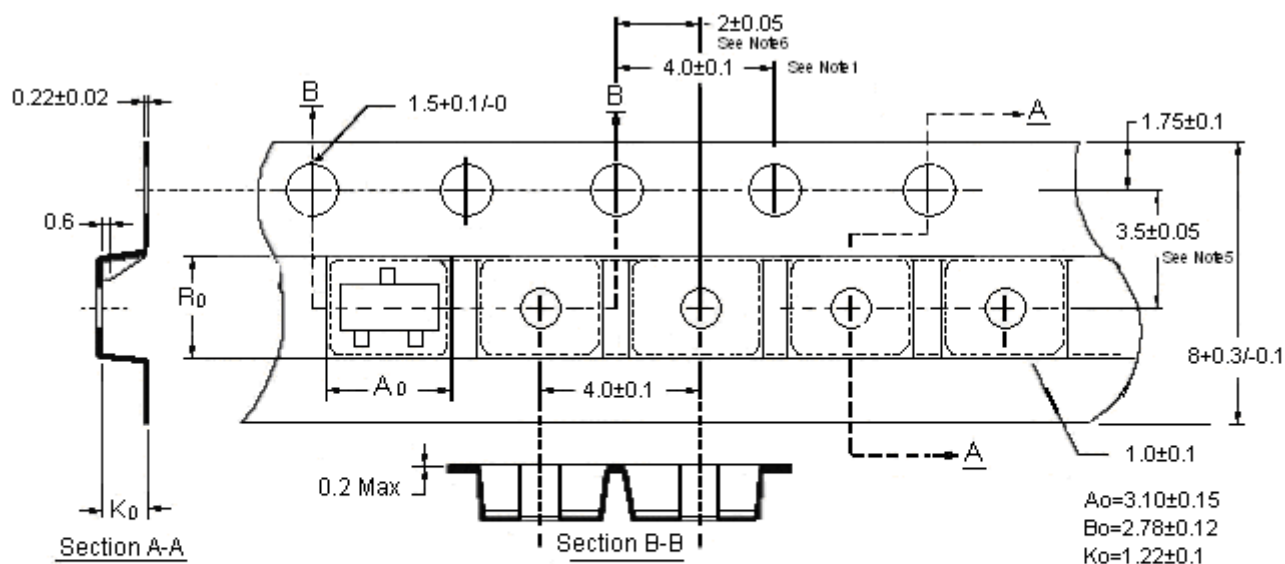


Reel Dimension



Unit: millimeter

Carrier Tape Dimension

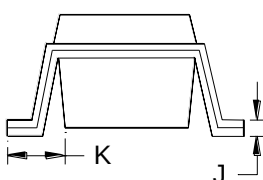
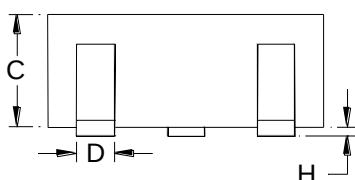
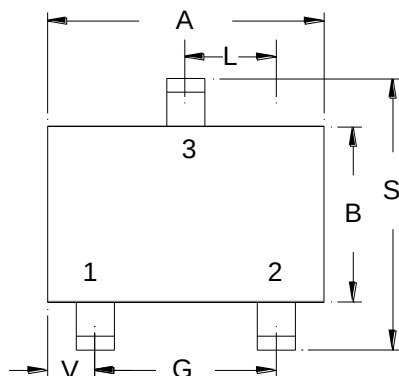


Notes:

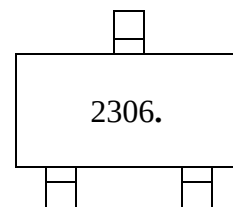
1. 10 sprocket hole pitch cumulative tolerance ± 0.2 .
2. Camber not to exceed 1mm in 100mm.
3. Material : conductive Black Polystyrene.
4. A_0 & B_0 measured on a plane 0.3mm above the bottom of the pocket.
5. K_0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

SOT-23 Dimension



Marking:



3-Lead SOT-23 Plastic
Surface Mounted Package

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

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1181	2.80	3.00	J	0.0032	0.0059	0.08	0.15
B	0.0472	0.0551	1.20	1.40	K	0.0216 REF		0.55 REF	
C	0.0354	0.0453	0.90	1.15	L	0.0354	0.0394	0.90	1.00
D	0.0118	0.0197	0.30	0.50	S	0.0885	0.1004	2.25	2.55
G	0.0709	0.0787	1.80	2.00	V	0.0098	0.0256	0.25	0.65
H	0.0000	0.0040	0.00	0.10					