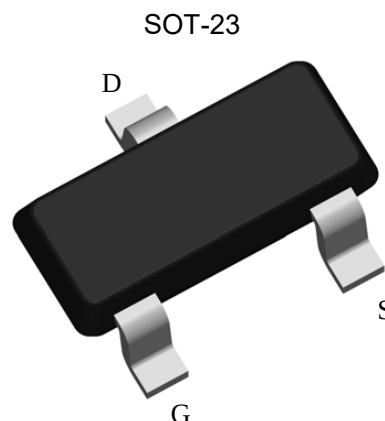


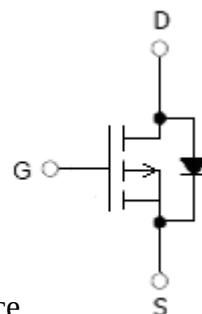
-20V P-Channel Enhancement Mode MOSFET

Features:

- Compact and low profile SOT-23 package
- Advanced trench process technology
- High density cell design for ultra low on resistance
- Pb-free lead plating package



BV_{DSS}	-20V
$I_D @ V_{GS}=-10V, T_A=25^{\circ}C$	-1.4A
$R_{DS(on)}@V_{GS}=-4.5V, I_D=-1A$	102m Ω (typ)
$R_{DS(on)}@V_{GS}=-2.5V, I_D=-1A$	138m Ω (typ)



G : Gate
S : Source
D : Drain

Ordering Information

Device	Package	Shipping
KWP1067	SOT-23 (Pb-free lead plating and halogen-free package)	3000 pcs / tape & reel

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V _{DS}	-20	V
Gate-Source Voltage	V _{GS}	±12	
Continuous Drain Current @ TA=25°C, V _{GS} =-4.5V	I _D	-1.4	A
Continuous Drain Current @ TA=70°C, V _{GS} =-4.5V		-1.1	
Pulsed Drain Current (Notes 1, 2)	I _{DM}	-6.0	
Maximum Power Dissipation	P _D	0.4	W
Linear Derating Factor		0.003	W/°C
Operating Junction and Storage Temperature Range	T _j ; T _{stg}	-55~+150	°C

Note : 1. Pulse width limited by maximum junction temperature.
2. Pulse width ≤ 100μs, duty cycle ≤ 5%.

Thermal Performance

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Ambient	R _{θJA}	312	°C/W
Thermal Resistance, Junction-to-Case, max	R _{θJC}	150	

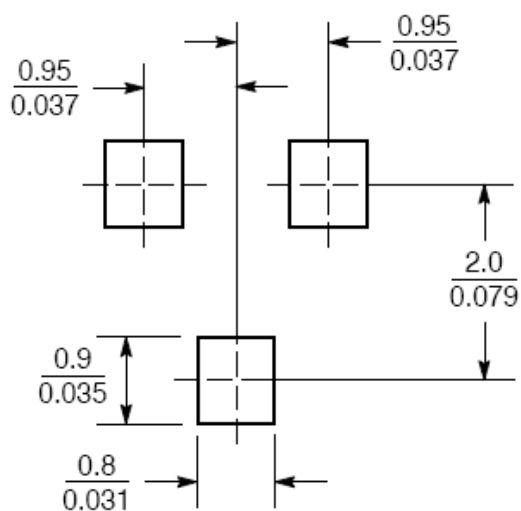
Electrical Characteristics (Tj=25°C, unless otherwise noted)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	-20	-	-	V	V _{GS} =0V, I _D =-250μA
ΔBV _{DSS} /ΔT _j	-	0.01	-	V/°C	Reference to 25°C, I _D =-250μA
V _{GS(th)}	-0.4	-	-1.0	V	V _{DS} =V _{GS} , I _D =-250μA
I _{GSS}	-	-	±100	nA	V _{GS} =±12V, V _{DS} =0V
I _{DSS}	-	-	-1	μA	V _{DS} =-20V, V _{GS} =0V
	-	-	-10		V _{DS} =-20V, V _{GS} =0V (T _j =55°C)
*R _{DS(ON)}	-	102	145	mΩ	V _{GS} =-4.5V, I _D =-1A
	-	138	200		V _{DS} =-2.5V, I _D =-1A
*G _{FS}	-	2.8	-	S	V _{DS} =-10V, I _D =-1A
Dynamic					
*Q _g	-	4.1	-	nC	V _{DS} =-16V, I _D =-1.5A, V _{GS} =-4V
*Q _{gs}	-	1.2	-		
*Q _{gd}	-	1.1	-		
*t _{d(ON)}	-	2.8	-	ns	V _{DS} =-5V, I _D =-1A, V _{GS} =-5V, R _G =6Ω
*t _r	-	17	-		
*t _{d(OFF)}	-	29.2	-		
*t _f	-	3.8	-		

Ciss	-	350	-	pF	V _{DS} =-5V, V _{GS} =0V, f=1MHz
Coss	-	55	-		
Crss	-	41	-		
Source-Drain Diode					
*V _{SD}	-	-0.82	-1.2	V	V _{GS} =0V, I _S =-0.63A
t _{rr}	-	5.4	-	ns	V _{GS} =0V, I _F =-1A, dI _F /dt=100A/μs
t _a	-	3	-		
t _b	-	2.4	-		
Q _{rr}	-	1.7	-	nC	

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

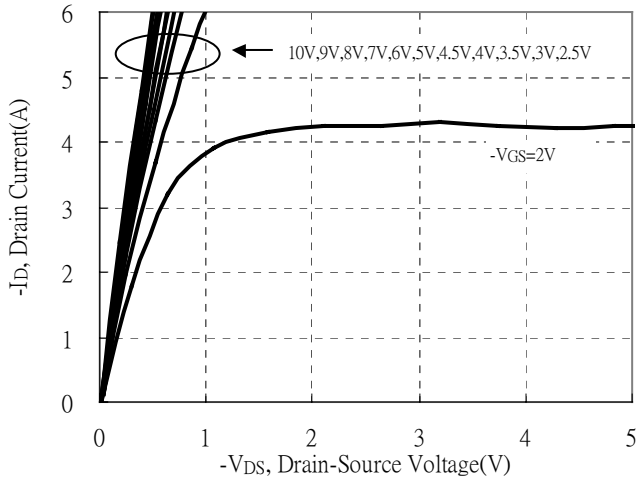
Recommended Soldering Footprint



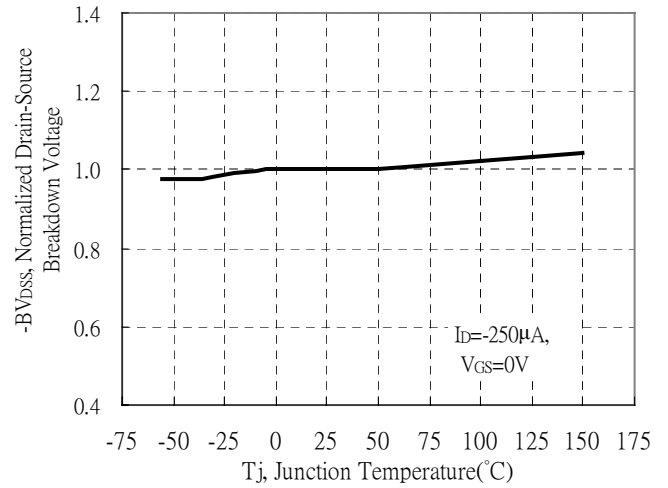
Unit : $\frac{\text{mm}}{\text{inches}}$

Typical Characteristics

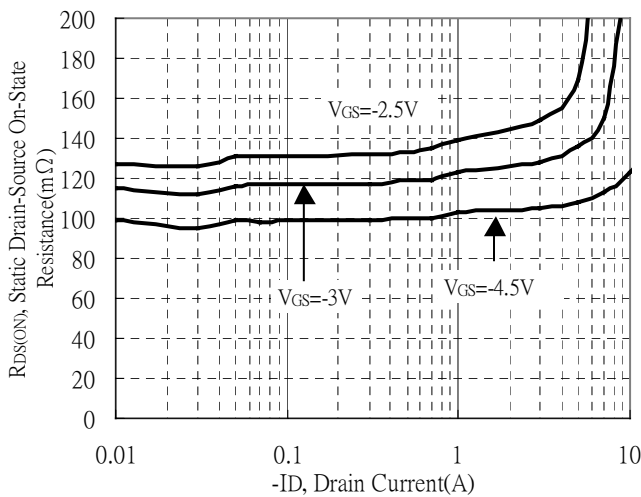
Typical Output Characteristics



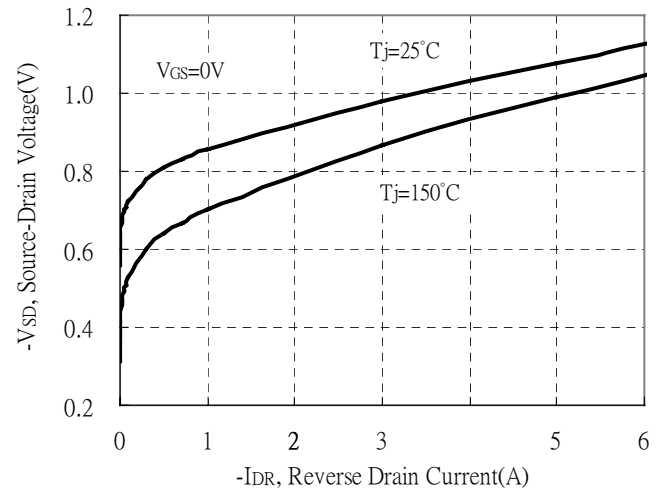
Breakdown Voltage vs Ambient Temperature



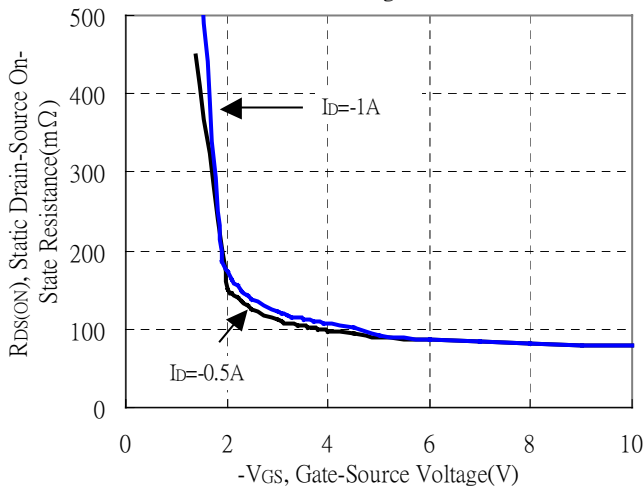
Static Drain-Source On-State resistance vs Drain Current



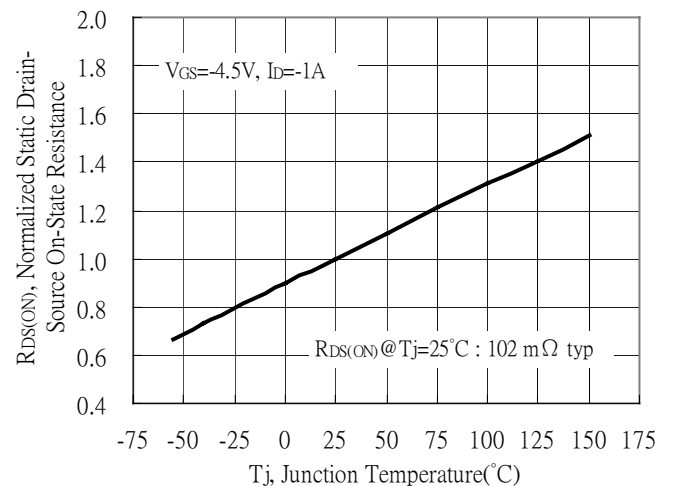
Reverse Drain Current vs Source-Drain Voltage



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

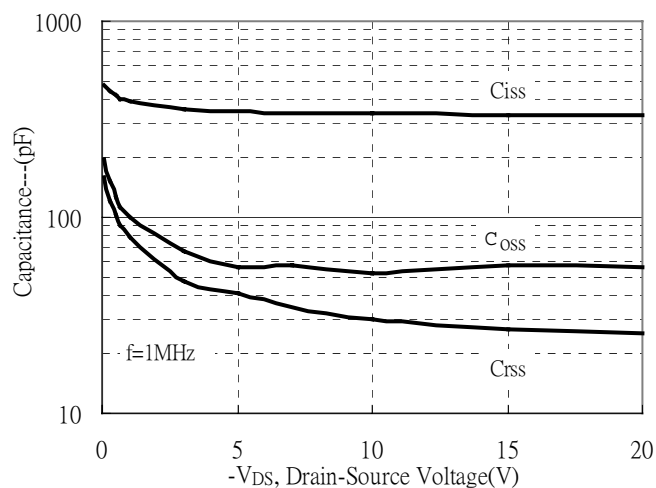


Drain-Source On-State Resistance vs Junction Temperature

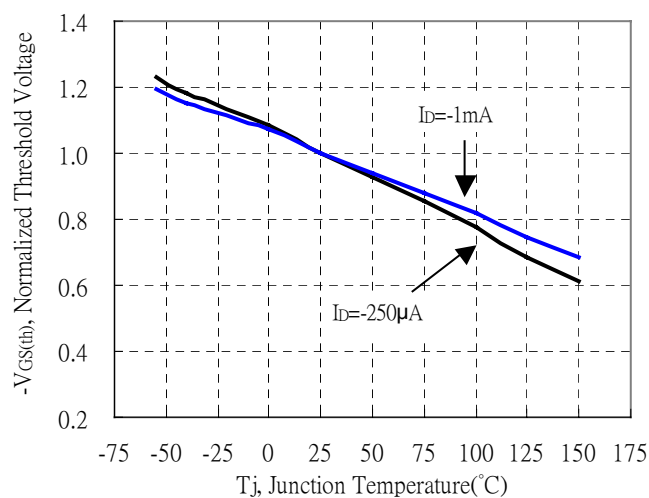


Typical Characteristics(Cont.)

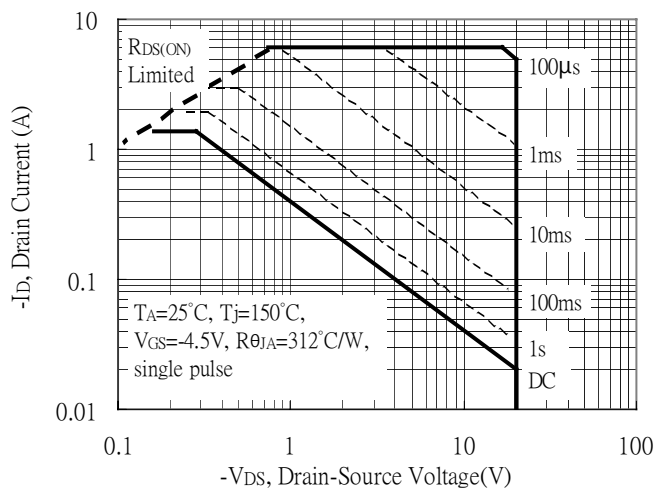
Capacitance vs Drain-to-Source Voltage



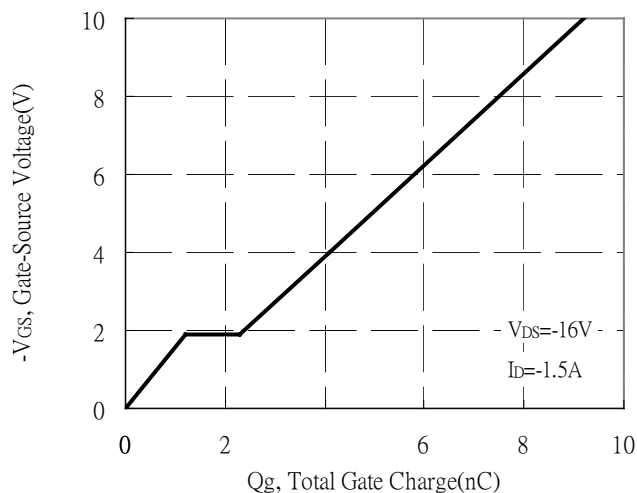
Threshold Voltage vs Junction Temperature



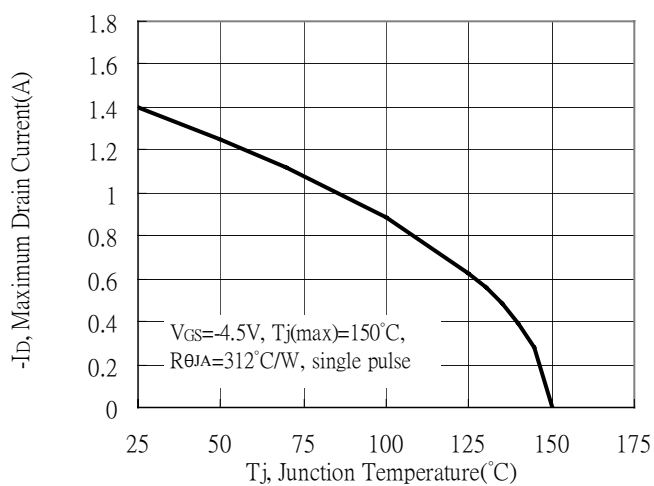
Maximum Safe Operating Area



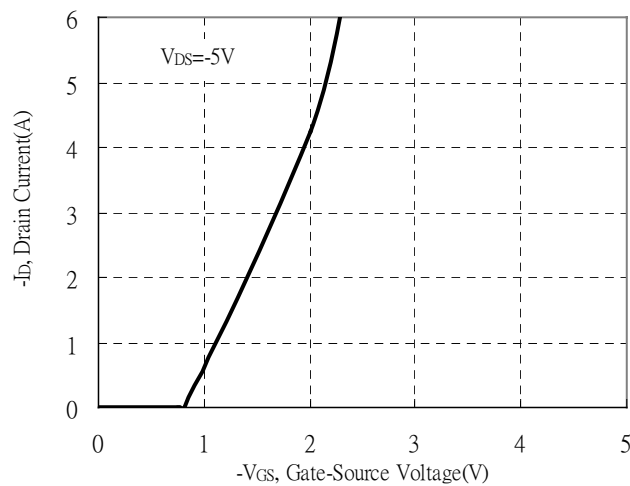
Gate Charge Characteristics



Maximum Drain Current vs Junction Temperature

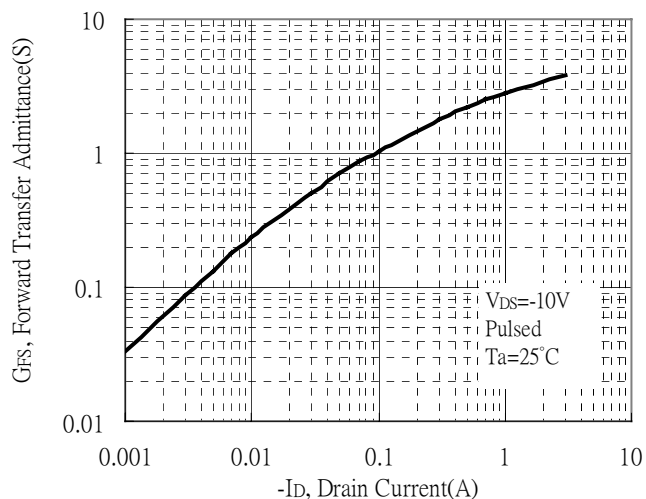


Typical Transfer Characteristics

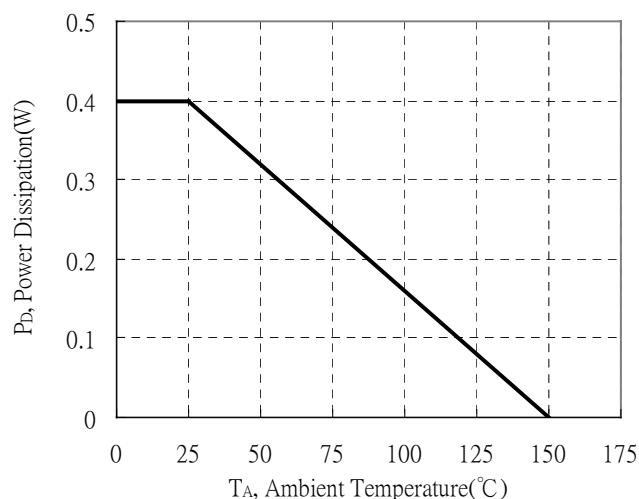


Typical Characteristics(Cont.)

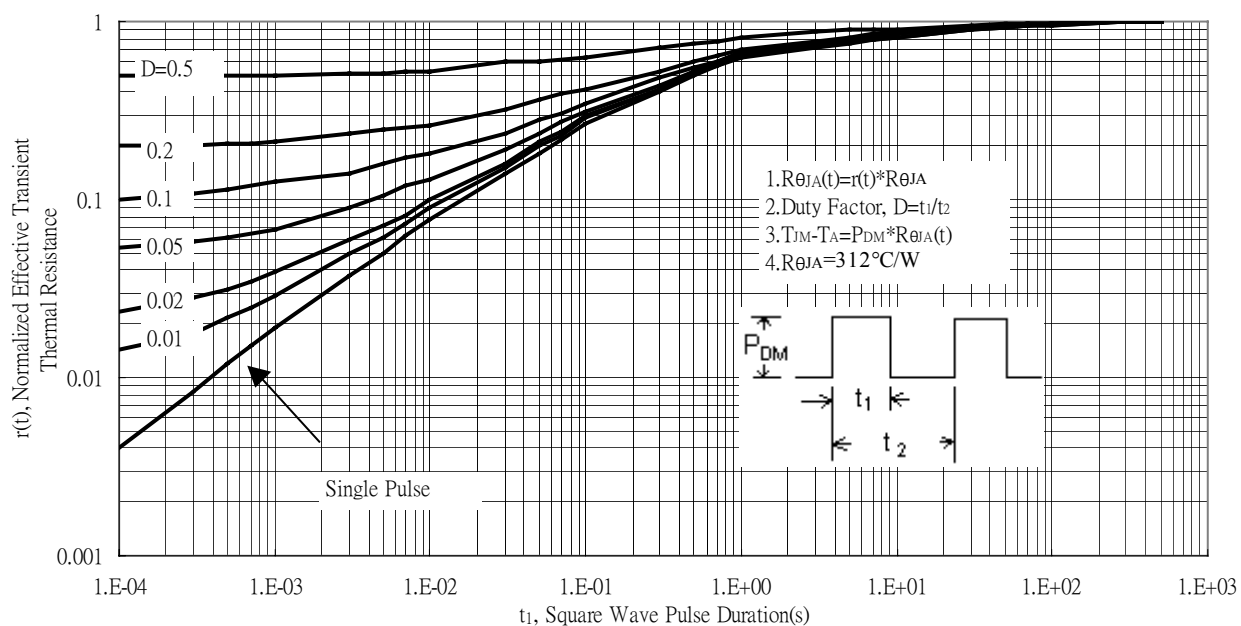
Forward Transfer Admittance vs Drain Current



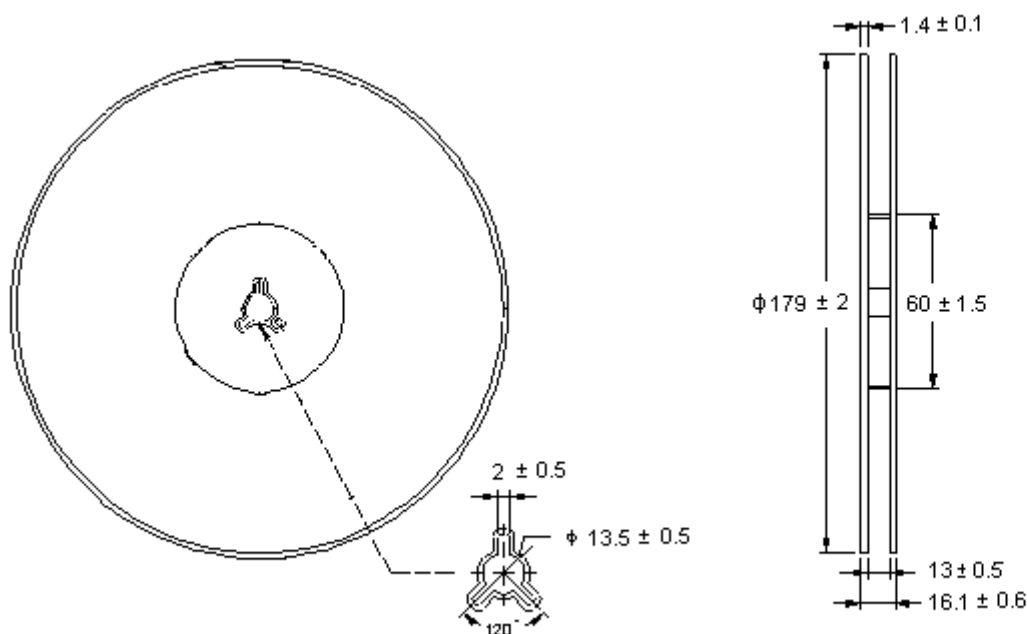
Power Derating Curve



Transient Thermal Response Curves

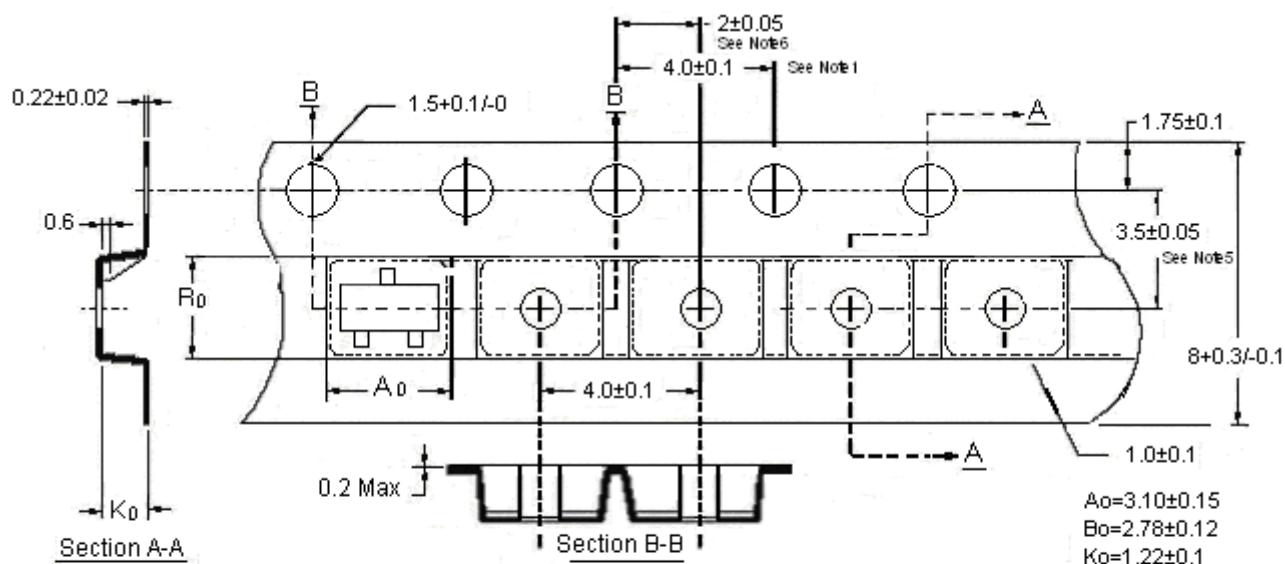


Reel Dimension



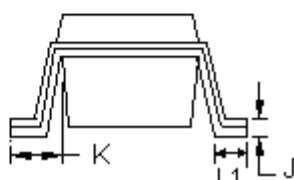
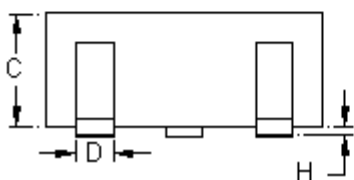
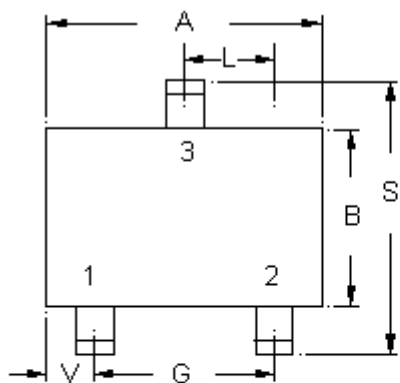
Unit: millimeter

Carrier Tape Dimension

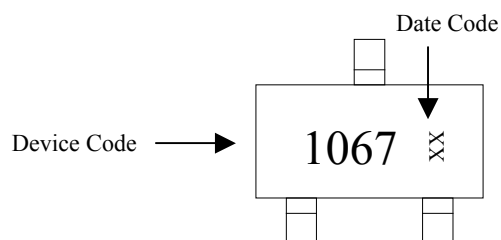


Unit : millimeter

SOT-23 Dimension



Marking:



3-Lead SOT-23 Plastic
Surface Mounted Package

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

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0032	0.0079	0.08	0.20
B	0.0472	0.0669	1.20	1.70	K	0.0118	0.0266	0.30	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1161	2.10	2.95
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0000	0.0040	0.00	0.10	L1	0.0118	0.0197	0.30	0.50