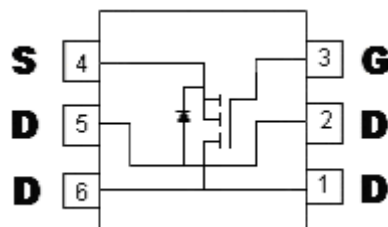


P-Channel Enhancement Mode Power MOSFET

Features:

- Simple drive requirement
- Low on-resistance
- Small package outline
- Pb-free lead plating and halogen-free package



G : Gate S : Source D : Drain

BV _{DSS}		-14V
I _D @V _{GS} =-4.5V, T _C =25°C		-7.1A
I _D @V _{GS} =-4.5V, T _A =25°C		-6.0A
R _{DS(ON)} (TYP)	V _{GS} =-4.5V, I _D =-4.5A	22.5mΩ
	V _{GS} =-2.5V, I _D =-2.2A	30.3mΩ
	V _{GS} =-1.8V, I _D =-2.2A	49.0mΩ

Absolute Maximum Ratings (T_a=25°C)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		V _{DS}	-14	V
Gate-Source Voltage		V _{GS}	±8	
Continuous Drain Current	T _C =25 °C, V _{GS} =-4.5V	I _D	-7.1	A
	T _C =70 °C, V _{GS} =-4.5V		-5.7	
	T _A =25 °C, V _{GS} =-4.5V (Note 1)		-6.0	
	T _A =70 °C, V _{GS} =-4.5V (Note 1)		-4.8	
Pulsed Drain Current (Note 2, 3)		I _{DM}	-40	
Total Power Dissipation	T _C =25 °C	P _D	3.1	W
	T _C =70 °C		2.0	
	T _A =25 °C (Note 1)		2.0	
	T _A =70 °C (Note 1)		1.25	
Operating Junction Temperature and Storage Temperature Range		T _j , T _{stg}	-55~+150	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	R _{th,j-c}	40	°C/W
Thermal Resistance, Junction-to-ambient, max (Note 1)	R _{θJA}	62.5	

Note : 1.Surface mounted on 1 in² copper pad of FR-4 board, t≤5 sec. 156°C/W when mounted on minimum copper pad.

2.Pulse width limited by maximum junction temperature.

3.Pulse Width ≤300μs, Duty Cycle≤2%

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

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	-14	-	-	V	V _{GS} =0V, I _D =-250μA
ΔBV _{DSS} /ΔT _j	-	-3	-	mV/°C	Reference to 25°C, I _D =-250μA
V _{GS(th)}	-0.4	-	-1	V	V _{DS} =V _{GS} , I _D =-250μA
I _{GSS}	-	-	±100	nA	V _{GS} =±8V, V _{DS} =0V
I _{DSS}	-	-	-100		V _{DS} =-12V, V _{GS} =0V, T _j =25°C
	-	-	-10	μA	V _{DS} =-12V, V _{GS} =0V, T _j =55°C
*R _{DS(ON)}	-	22.5	31.0	mΩ	I _D =-4.5A, V _{GS} =-4.5V
	-	30.3	41.5		I _D =-2.2A, V _{GS} =-2.5V
	-	49.0	66.0		I _D =-2.2A, V _{GS} =-1.8V
*G _{FS}	-	13	-	S	V _{DS} =-5V, I _D =-5A
Dynamic					
C _{iss}	-	1074	-	pF	V _{DS} =-10V, V _{GS} =0V, f=1MHz
C _{oss}	-	226	-		
C _{rss}	-	191	-		
t _{d(ON)}	-	14.8	-	ns	V _{DS} =-10V, I _D =-1A, V _{GS} =-4.5V, R _G =6Ω
t _r	-	21.8	-		
t _{d(OFF)}	-	105.6	-		
t _f	-	59.2	-		
Q _g	-	13.8	-	nC	V _{DS} =-10V, I _D =-4A, V _{GS} =-4.5V
Q _{gs}	-	2.1	-		
Q _{gd}	-	4.2	-		
Source-Drain Diode					
*I _S	-	-	-4	A	
*I _{SM}	-	-	-16		
*V _{SD}	-	-0.77	-1	V	I _S =-1A, V _{GS} =0V
*T _{rr}	-	80	-	ns	I _S =-4A, V _{GS} =0V, dI/dt=100A/μs
O _{rr}	-	68	-	nC	

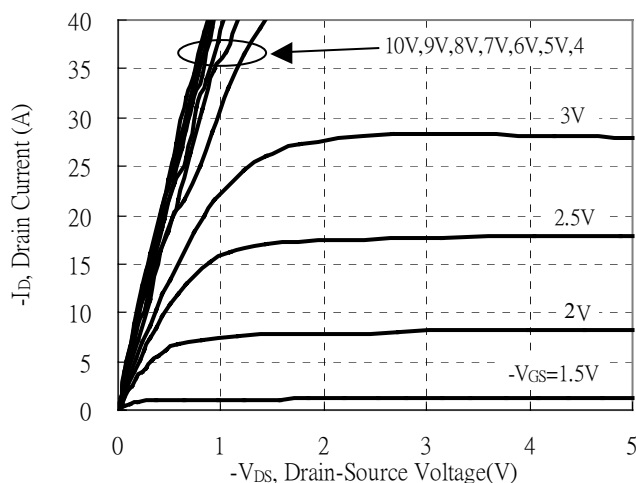
*Pulse Test : Pulse Width ≤300μs, Duty Cycle ≤2%

Ordering Information

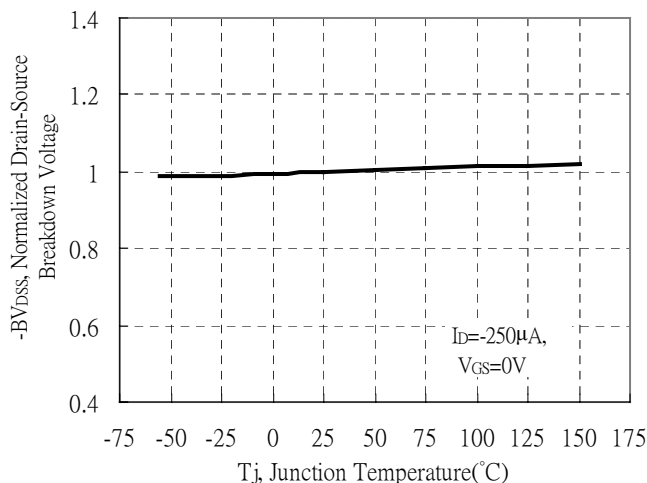
Device	Package	Shipping
KWA025P01	SOT-26 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

Typical Characteristics

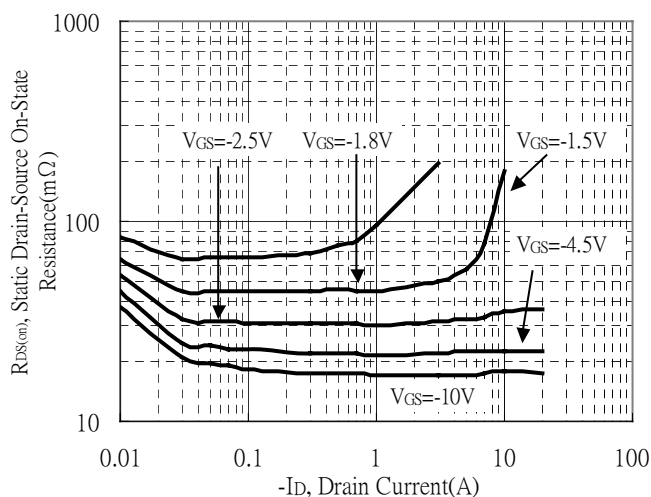
Typical Output Characteristics



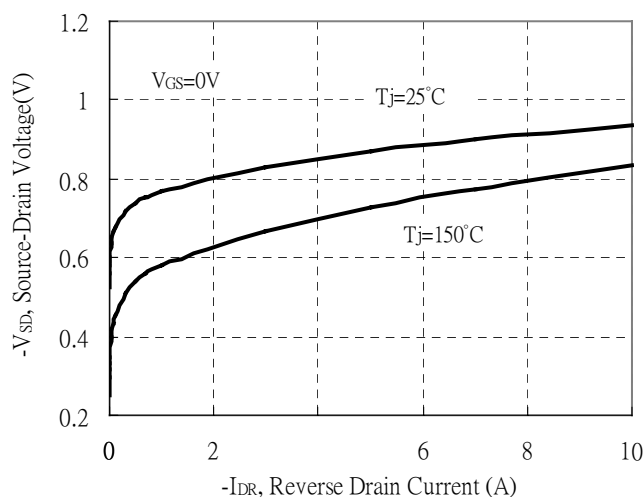
Breakdown Voltage vs Ambient Temperature



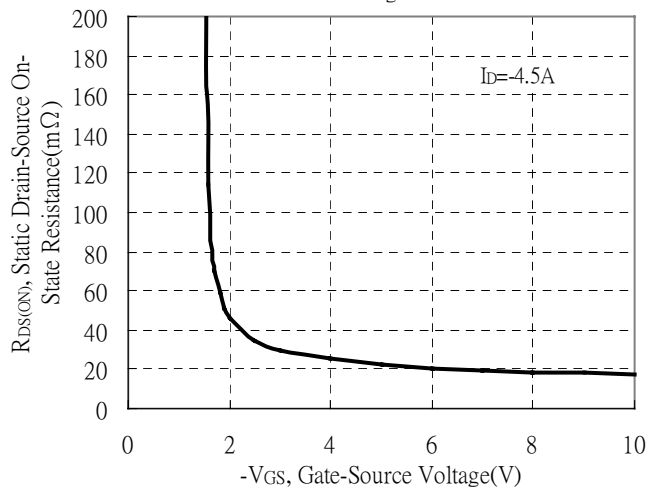
Static Drain-Source On-State resistance vs Drain Current



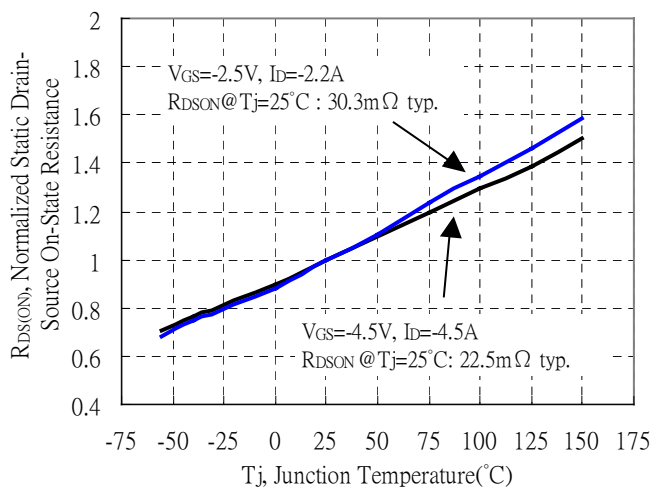
Reverse Drain Current vs Source-Drain Voltage



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

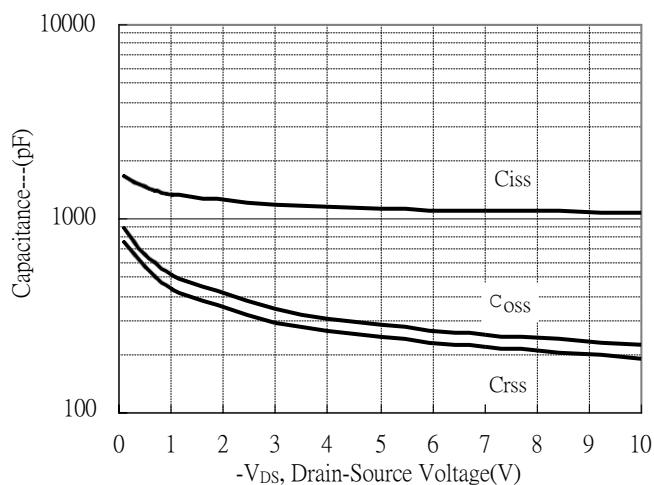


Drain-Source On-State Resistance vs Junction Temperature

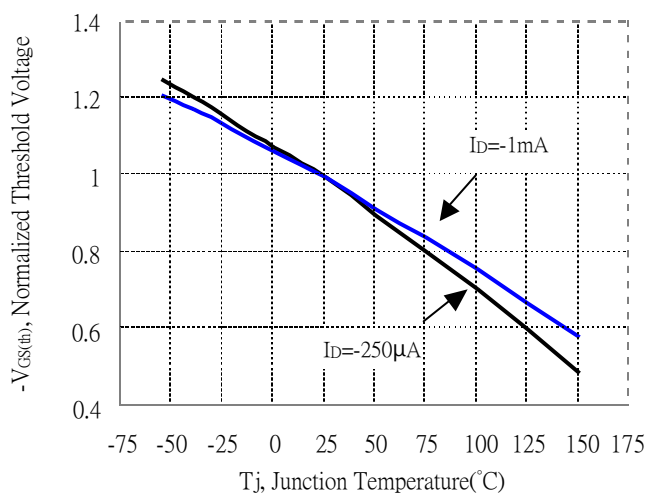


Typical Characteristics(Cont.)

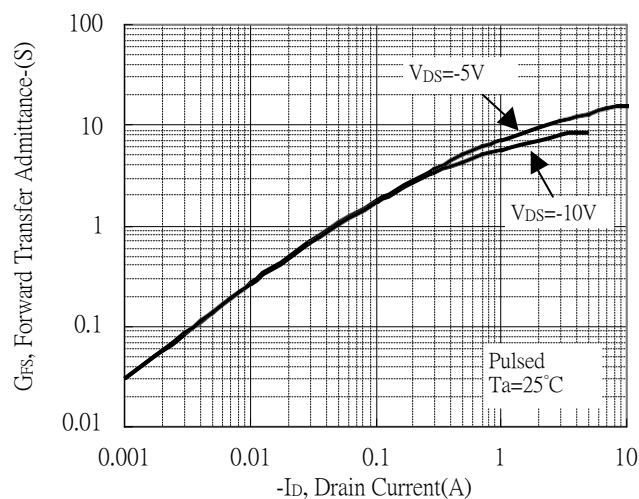
Capacitance vs Drain-to-Source Voltage



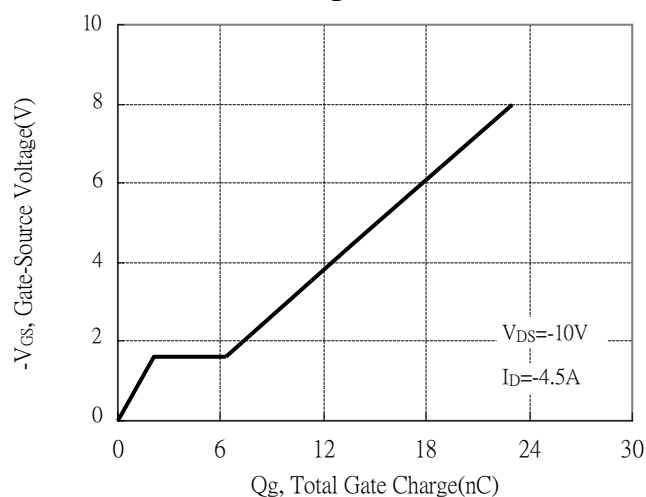
Threshold Voltage vs Junction Temperature



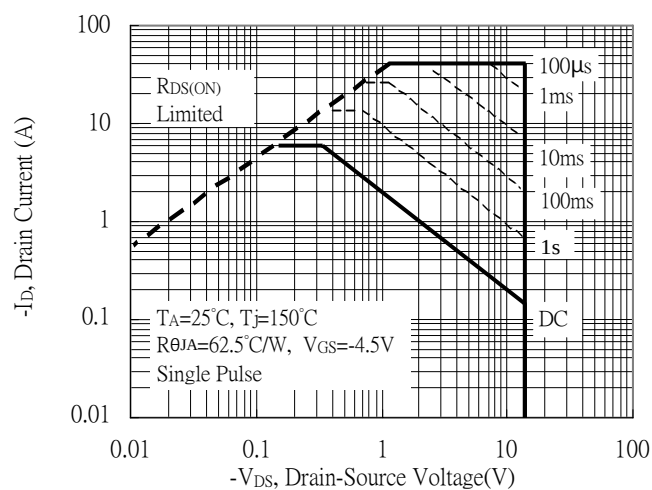
Forward Transfer Admittance vs Drain Current



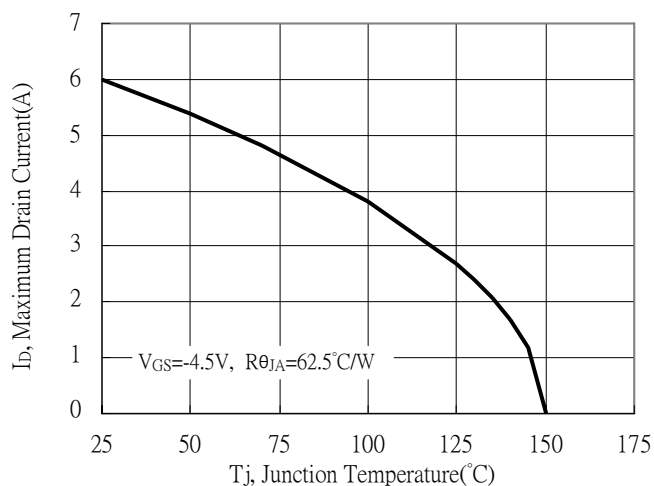
Gate Charge Characteristics



Maximum Safe Operating Area

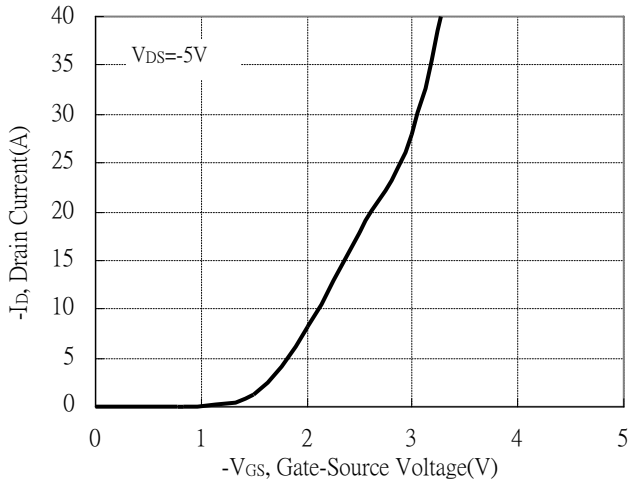


Maximum Drain Current vs Junction Temperature

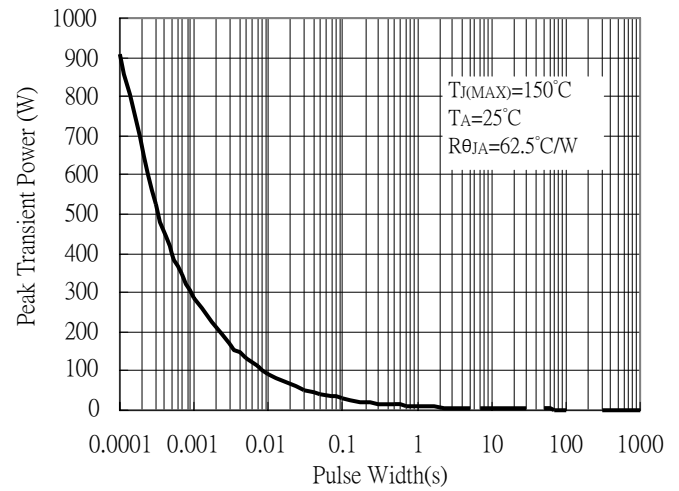


Typical Characteristics(Cont.)

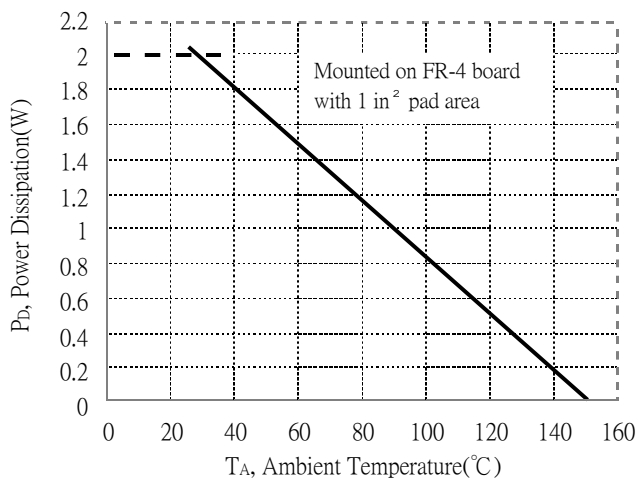
Typical Transfer Characteristics



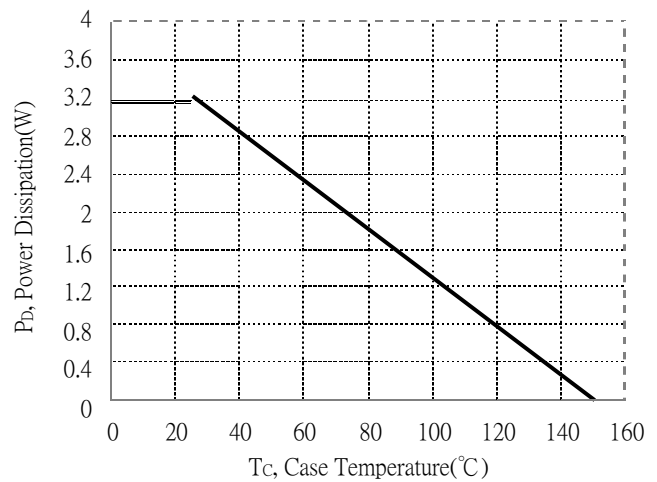
Single Pulse Maximum Power Dissipation



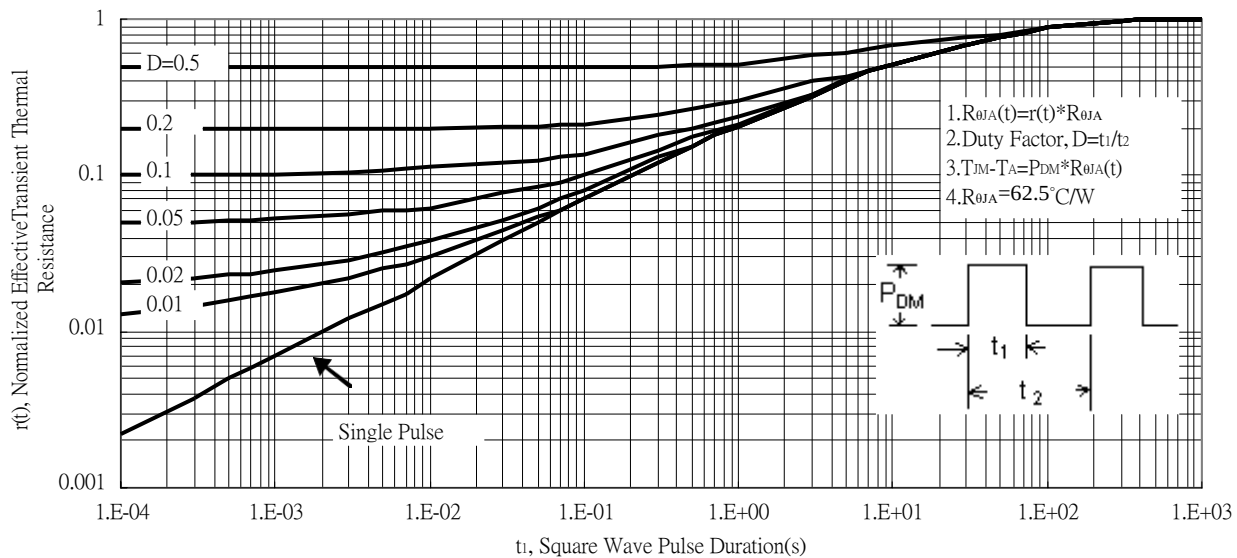
Power Derating Curve



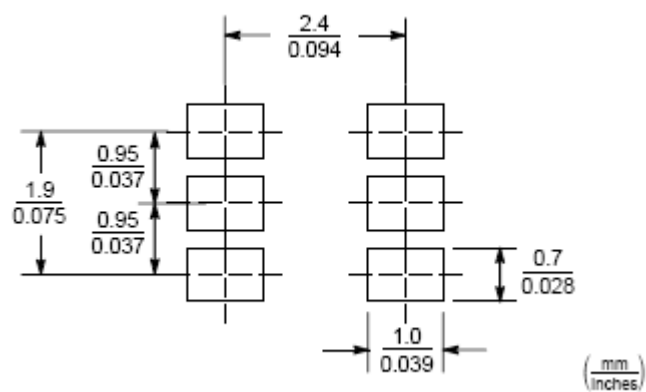
Power Derating Curve



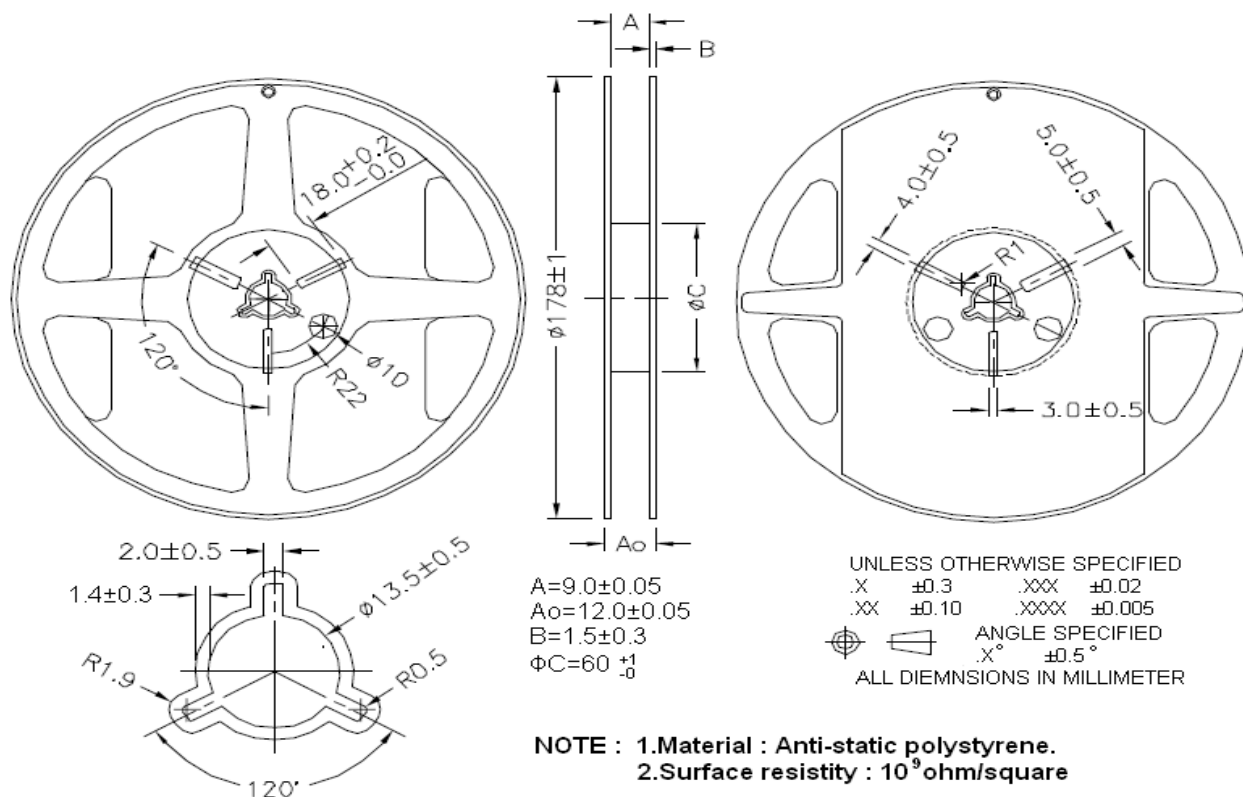
Transient Thermal Response Curves



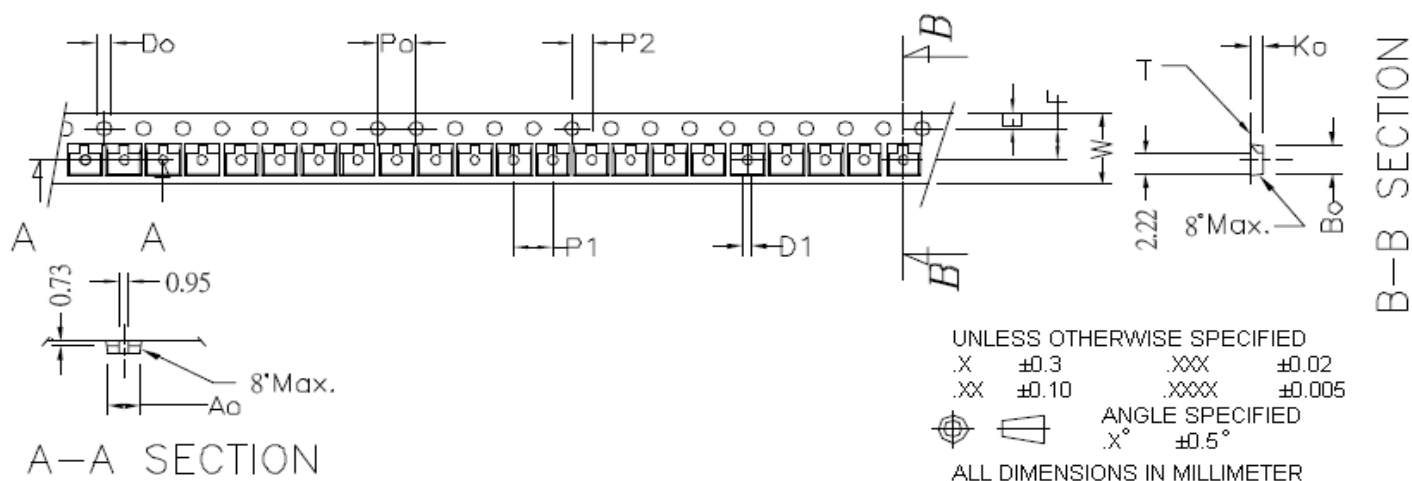
Recommended Soldering Footprint



Reel Dimension

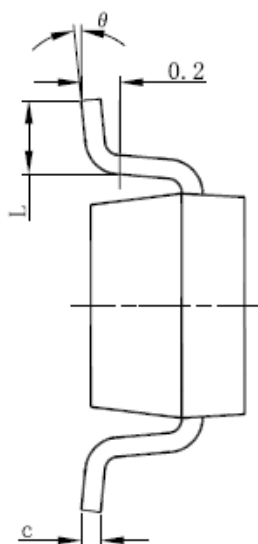
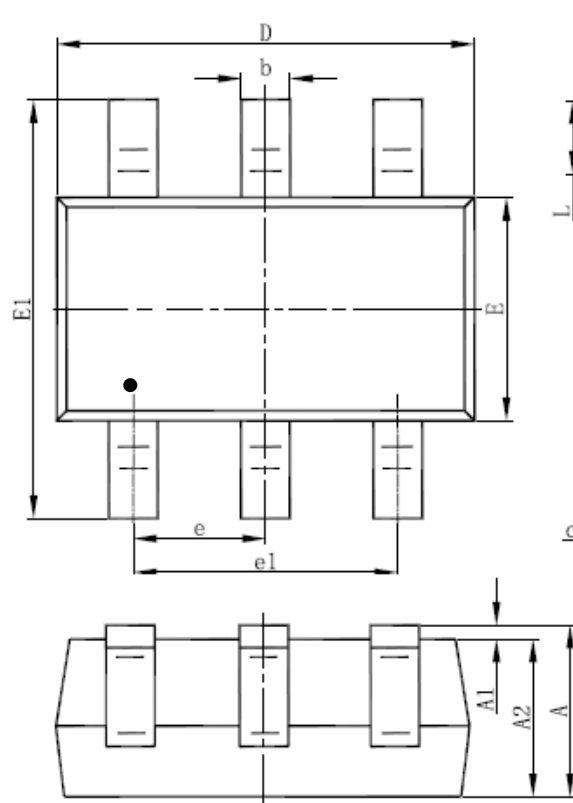


Carrier Tape Dimension

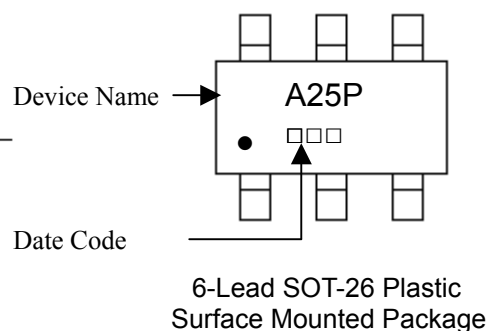


symbol	Ao	Bo	Ka	Po	P1	P2	T
Spec	3.20±0.1	3.00±0.1	1.33±0.1	4.0±0.1	4.0±0.10	2.0±0.05	0.20±0.02
symbol	E	F	Do	D1	W	10Po	
Spec	1.75±0.1	3.5±0.05	1.50±0.10	1.0±0.25	8.0 ^{+0.3} _{-0.1}	40.0±0.2	

SOT-26 Dimension



Marking:



Style:

- Pin 1. Drain
- Pin 2. Drain (D)
- Pin 3. Gate (G)
- Pin 4. Source
- Pin 5. Drain
- Pin 6. Drain (D)

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049	E	1.500	1.700	0.059	0.067
A1	0.000	0.100	0.000	0.004	E1	2.650	2.950	0.104	0.116
A2	1.050	1.150	0.041	0.045	e	0.950 (BSC)		0.037 (BSC)	
b	0.300	0.500	0.012	0.020	e1	1.800	2.000	0.071	0.079
c	0.100	0.200	0.004	0.008	L	0.300	0.600	0.012	0.024
D	2.820	3.020	0.111	0.119	θ	0°	8°	0°	8°