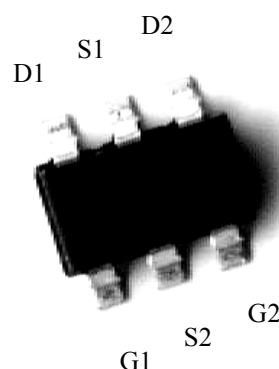


N- AND P-Channel Enhancement Mode MOSFET

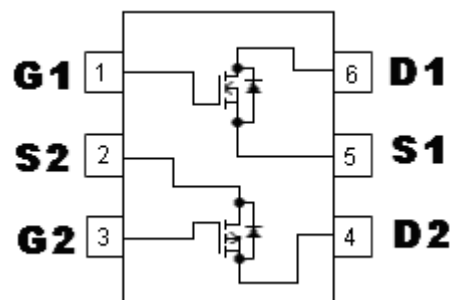
Features:

- Simple drive requirement
- Low gate charge
- Low on-resistance
- Fast switching speed
- Pb-free lead plating and halogen-free package

SOT-26



	N-CH	P-CH
BV _{DSS}	30V	-30V
I _D	3.7A (V _{GS} =10V)	-2.7A (V _{GS} =-10 V)
R _{DS(on)} (TYP.)	37.7mΩ (V _{GS} =10V)	91.3mΩ (V _{GS} =-10V)
	42.7mΩ (V _{GS} =4.5V)	104mΩ (V _{GS} =-4.5V)
	62.6mΩ (V _{GS} =2.5V)	132mΩ (V _{GS} =-2.5V)



G : Gate S : Source D : Drain

Ordering Information

Device	Package	Shipping
KWC6601	SOT-26 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Limits		Unit
			N-channel	P-channel	
Drain-Source Breakdown Voltage		BV _{DSS}	30	-30	V
Gate-Source Voltage		V _{GS}	±12	±12	
Continuous Drain Current (Note 1)	TA=25°C ,V _{GS} =10V(N-CH), V _{GS} =-10V(P-CH)	I _D	3.7	-2.7	A
	TA=70°C, V _{GS} =10V(N-CH), V _{GS} =-10V(P-CH)	I _D	3.0	-2.2	
Pulsed Drain Current (Note 2)		I _{DM}	22	-16	
Total Power Dissipation (Note 1)		P _D	1.14		W
Operating Junction and Storage Temperature		T _j , T _{stg}	-55~+150		°C
Thermal Resistance, Junction-to-Ambient (Note 1)		R _{θJA}	110		°C/W
Thermal Resistance, Junction-to-Case		R _{θJC}	60		

Note : 1.Surface mounted on 1 in² copper pad of FR-4 board, t≤5 sec; 180°C/W when mounted on minimum copper pad.
 2.Pulse width limited by maximum junction temperature.

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

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	30	-	-	V	V _{GS} =0V, I _D =250μA
V _{GS(th)}	0.5	-	1.5		V _{DS} =V _{GS} , I _D =250μA
I _{GSS}	-	-	±100	nA	V _{GS} =±12V, V _{DS} =0V
I _{DSS}	-	-	1	μA	V _{DS} =24V, V _{GS} =0V
	-	-	25		V _{DS} =24V, V _{GS} =0V, T _j =70°C
*R _{DS(ON)}	-	37.7	55	mΩ	V _{GS} =10V, I _D =3.4A
	-	42.7	65		V _{GS} =4.5V, I _D =3A
	-	62.6	90		V _{GS} =2.5V, I _D =2A
*G _{FS}	-	4.3	-	S	V _{DS} =5V, I _D =3A
Dynamic					
C _{iss}	-	315	-	pF	V _{DS} =15V, V _{GS} =0V, f=1MHz
C _{oss}	-	46	-		
C _{rss}	-	33	-		
*t _{d(ON)}	-	3.6	-	ns	V _{DS} =15V, I _D =3.4A, V _{GS} =10V, R _G =6Ω
*t _r	-	16.6	-		
*t _{d(OFF)}	-	24.4	-		
*t _f	-	4.2	-		
*Q _g	-	9.4	-	nC	V _{DS} =15V, I _D =3.4A, V _{GS} =10V
*Q _{gs}	-	1.6	-		
*Q _{gd}	-	0.8	-		
Source-Drain Diode					
*V _{SD}	-	0.8	1	V	V _{GS} =0V, I _S =1A
*t _{rr}	-	7.7	-	ns	I _F =1A, V _{GS} =0V, dI _F /dt=100A/μs
*Q _{rr}	-	3.3	-	nC	

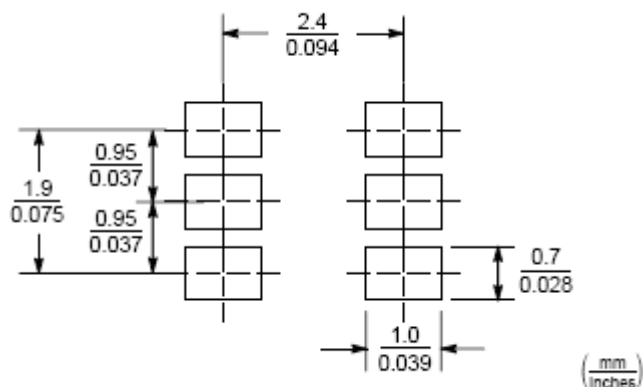
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

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

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	-30	-	-	V	V _{GS} =0V, I _D =-250μA
V _{GS(th)}	-0.5	-	-1.2		V _{DS} =V _{GS} , I _D =-250μA
I _{GSS}	-	-	±100	nA	V _{GS} =±12V, V _{DS} =0V
I _{DSS}	-	-	-1	μA	V _{DS} =-24V, V _{GS} =0V
	-	-	-10		V _{DS} =-24V, V _{GS} =0, T _j =70°C
*R _{DS(ON)}	-	91.3	110	mΩ	V _{GS} =-10V, I _D =-2.3A
	-	104	145		V _{GS} =-4.5V, I _D =-2A
	-	132	190		V _{GS} =-2.5V, I _D =-1A
*G _{FS}	-	4	-	S	V _{DS} =-5V, I _D =-2.3A
Dynamic					
C _{iss}	-	480	-	pF	V _{DS} =-15V, V _{GS} =0V, f=1MHz
C _{oss}	-	63	-		
C _{rss}	-	33	-		
*t _{d(ON)}	-	4.4	-	ns	V _{DD} =-15V, I _D =-2.3A, V _{GS} =-4.5V, R _G =6Ω
*t _r	-	17.2	-		
*t _{d(OFF)}	-	43	-		
*t _f	-	6.8	-		
*Q _g	-	11.4	-	nC	V _{DS} =-15V, I _D =-2.3A, V _{GS} =-10V
*Q _{gs}	-	1.3	-		
*Q _{gd}	-	0.7	-		
Source-Drain Diode					
*V _{SD}	-	-0.83	-1	V	V _{GS} =0V, I _S =-1A
*t _{rr}	-	7	-	ns	I _F =-1A, V _{GS} =0V, dI _F /dt=100A/μs
*Q _{rr}	-	2.9	-	nC	

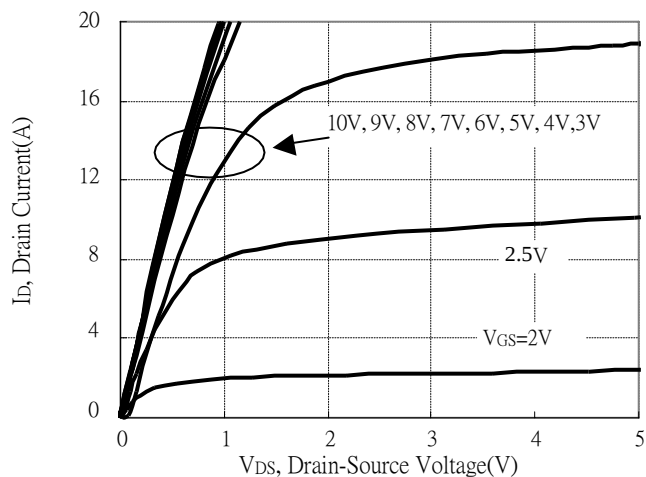
*Pulse Test : Pulse Width ≤300μs, Duty Cycle ≤2%

Recommended Soldering Footprint

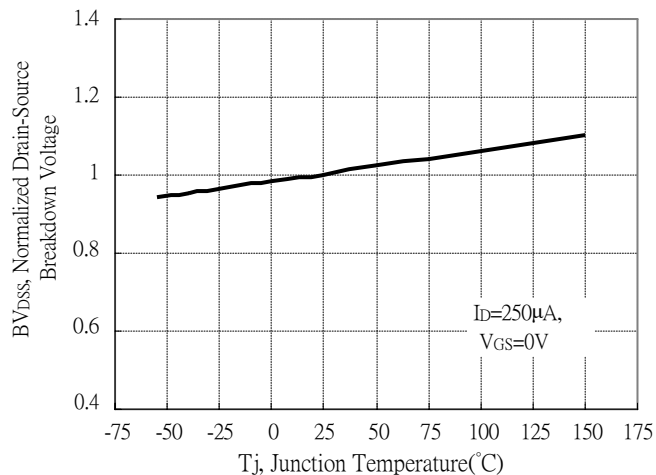


N-channel Typical Characteristics

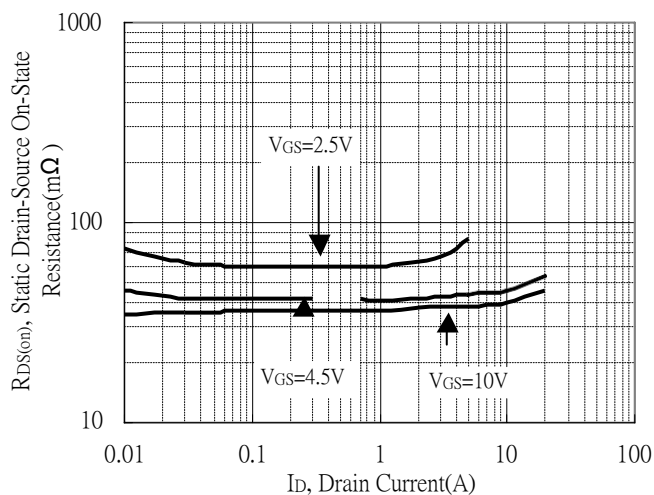
Typical Output Characteristics



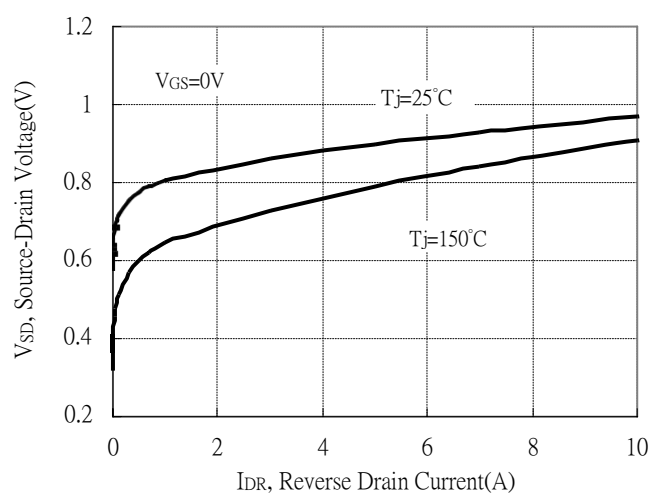
Breakdown Voltage vs Ambient Temperature



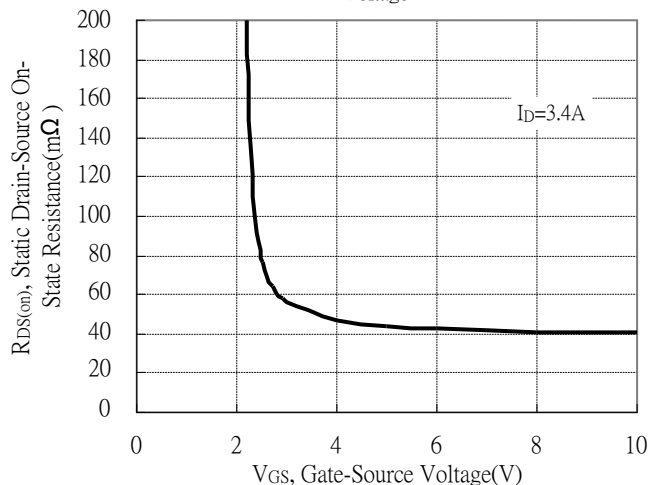
Static Drain-Source On-State resistance vs Drain Current



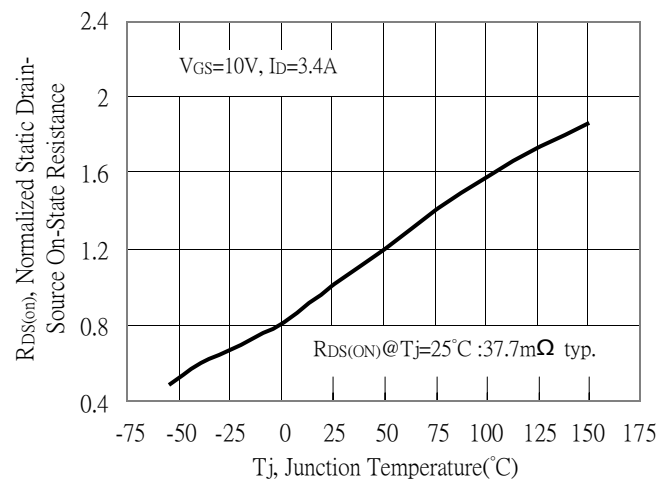
Reverse Drain Current vs Source-Drain Voltage



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

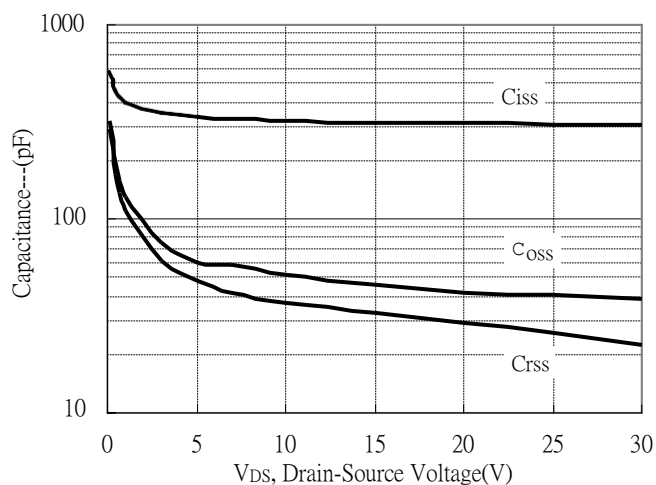


Drain-Source On-State Resistance vs Junction Temperature

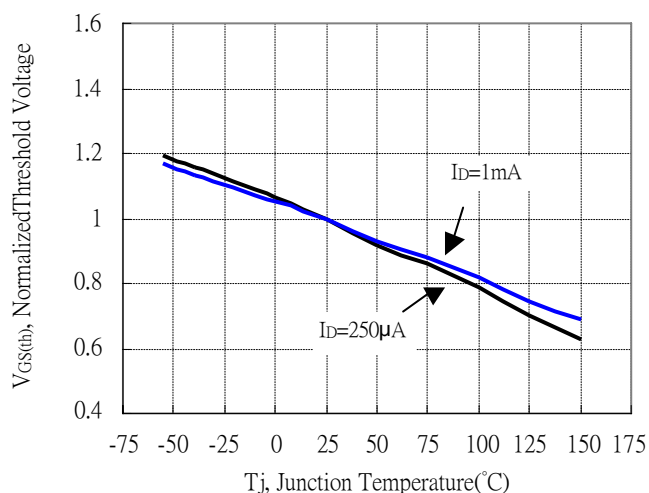


N-channel Typical Characteristics(Cont.)

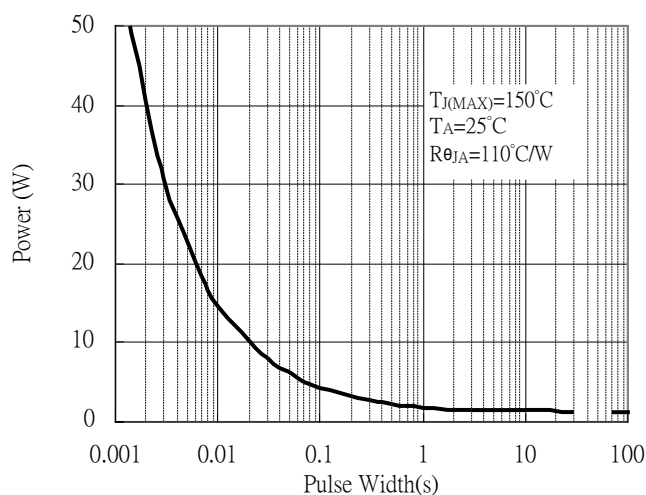
Capacitance vs Drain-to-Source Voltage



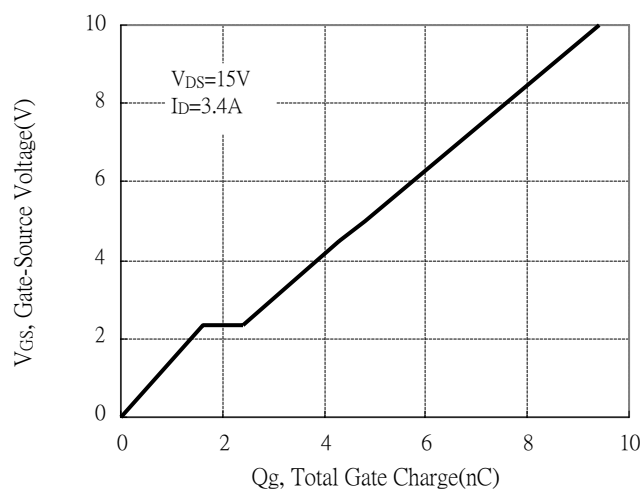
Threshold Voltage vs Junction Temperature



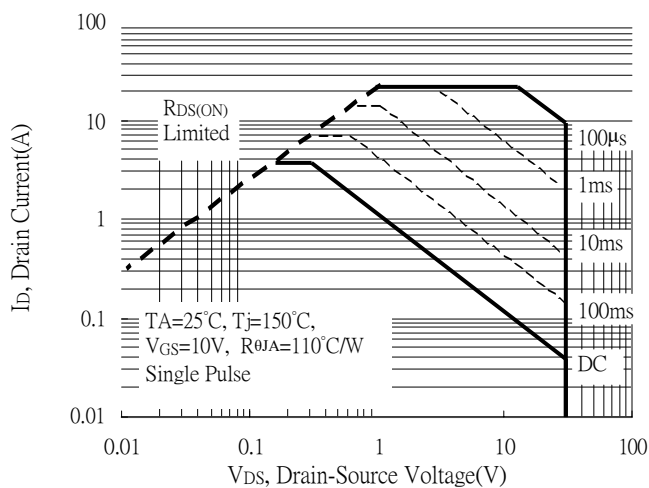
Single Pulse Power Rating, Junction to Ambient



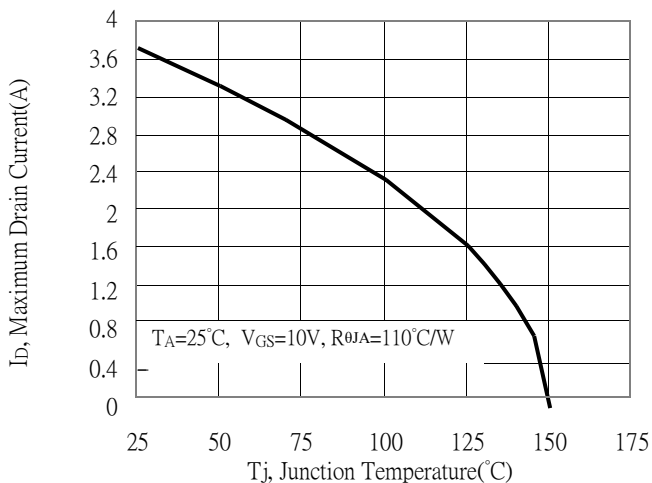
Gate Charge Characteristics



Maximum Safe Operating Area

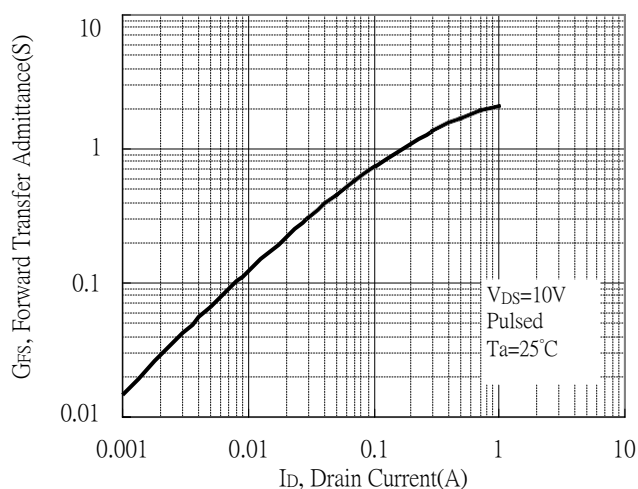


Maximum Drain Current vs Junction Temperature

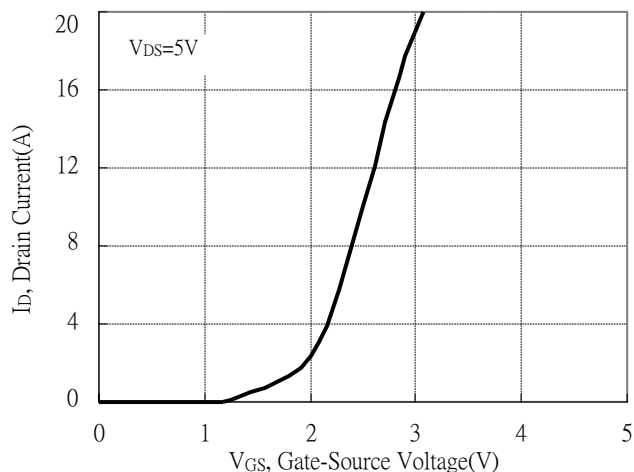


N-channel Typical Characteristics(Cont.)

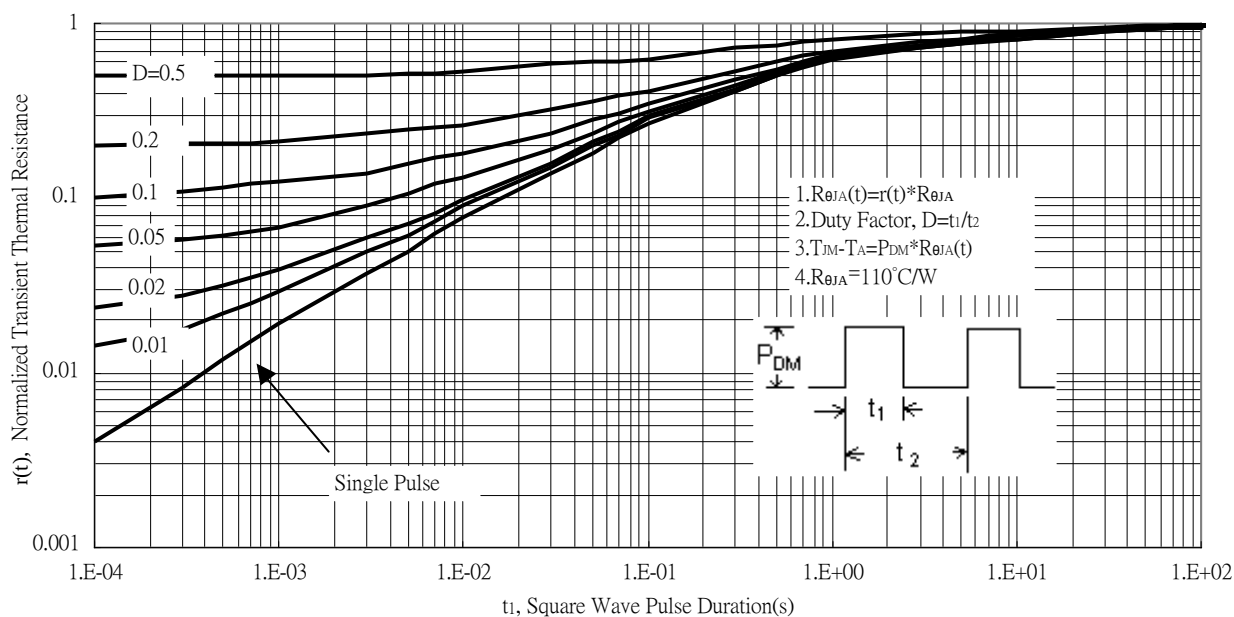
Forward Transfer Admittance vs Drain Current



Typical Transfer Characteristics

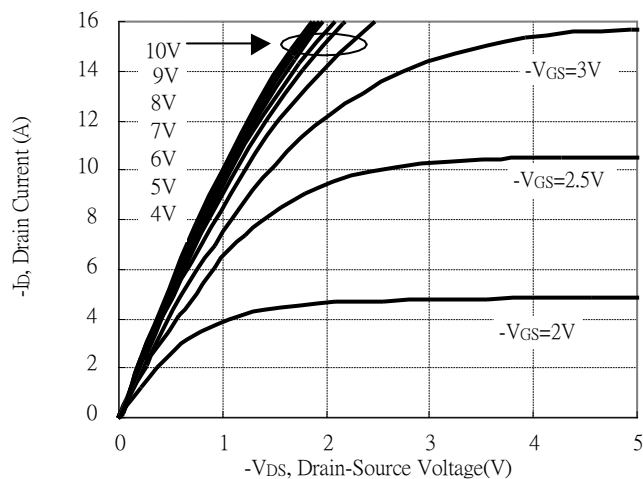


Transient Thermal Response Curves

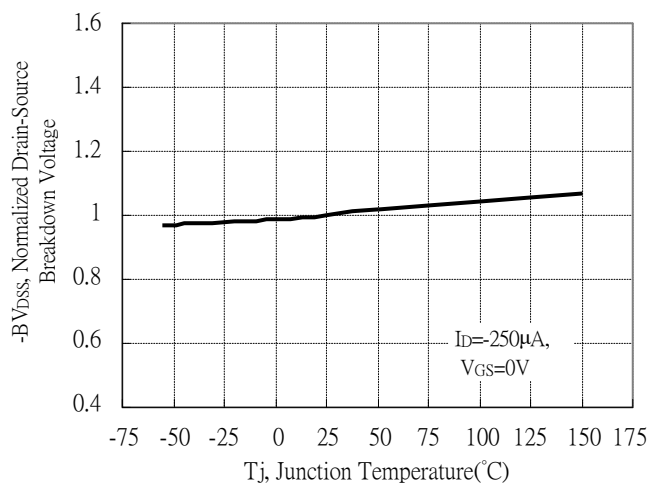


P-channel Typical Characteristics

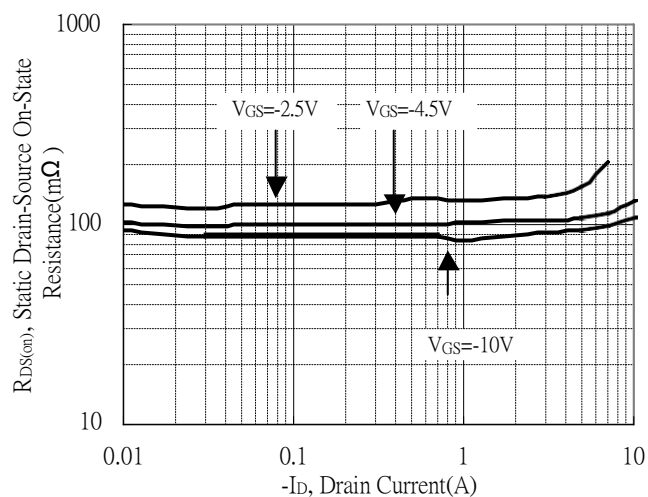
Typical Output Characteristics



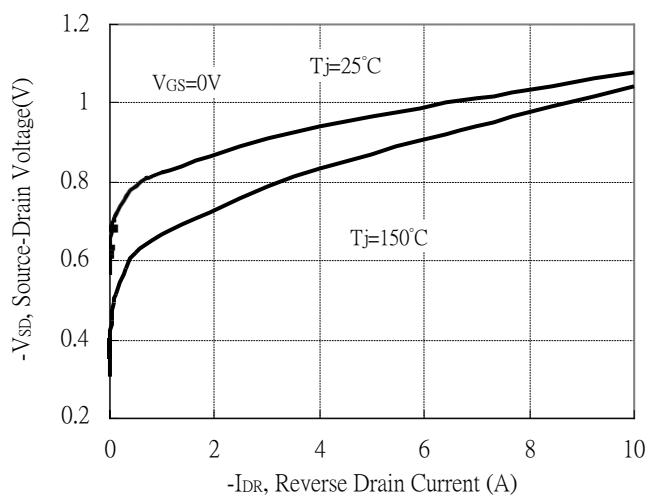
Breakdown Voltage vs Ambient Temperature



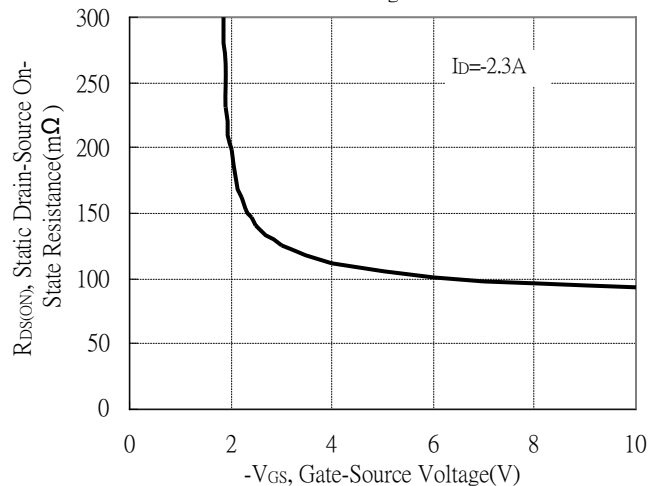
Static Drain-Source On-State resistance vs Drain Current



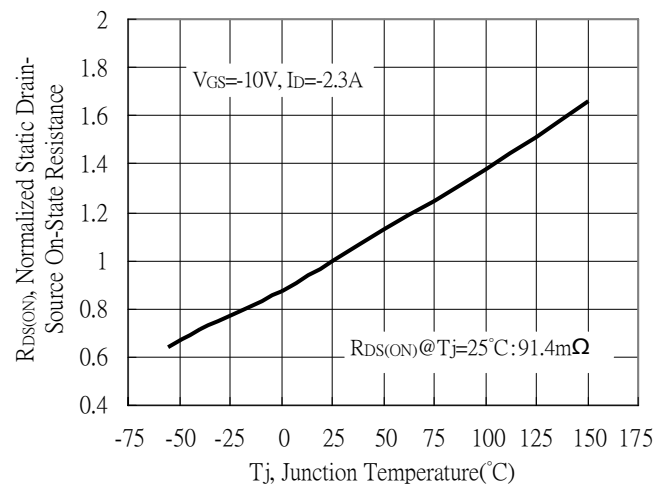
Reverse Drain Current vs Source-Drain Voltage



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

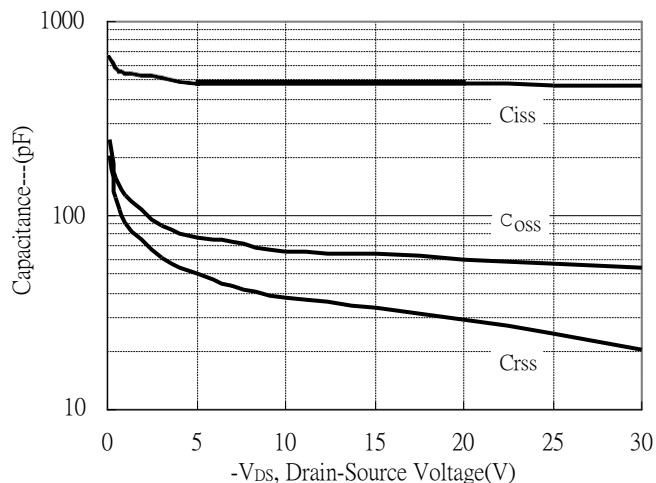


Drain-Source On-State Resistance vs Junction Temperature

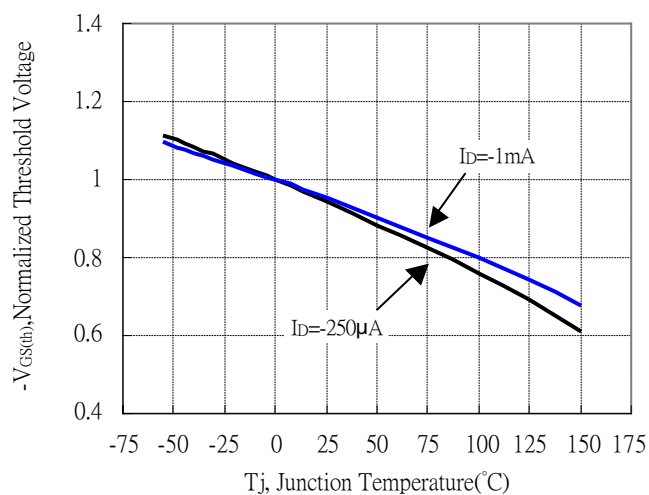


P-channel Typical Characteristics(Cont.)

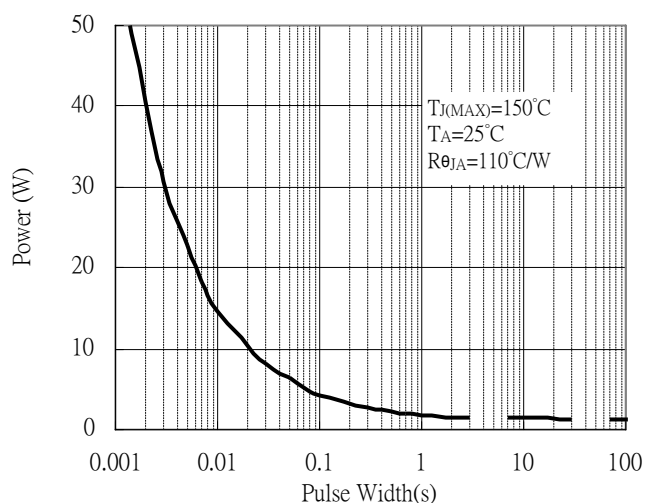
Capacitance vs Drain-to-Source Voltage



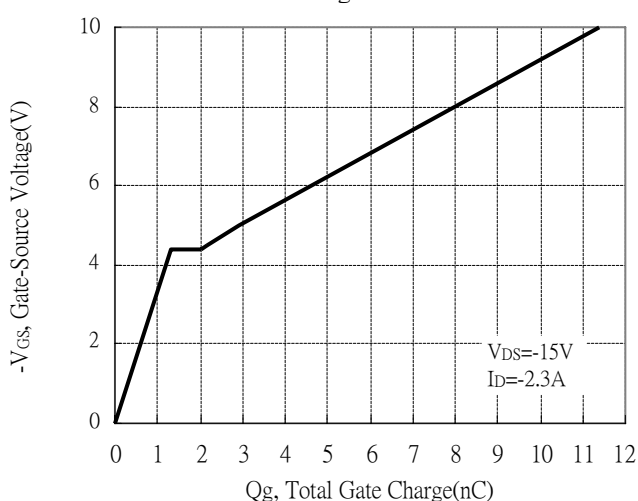
Threshold Voltage vs Junction Temperature



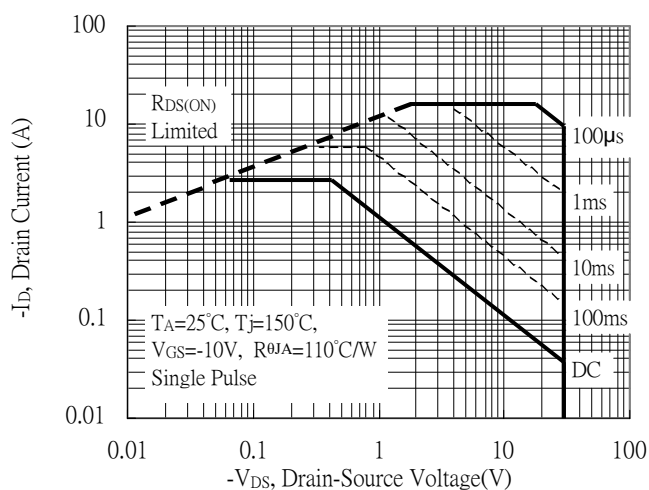
Single Pulse Power Rating, Junction to Ambient



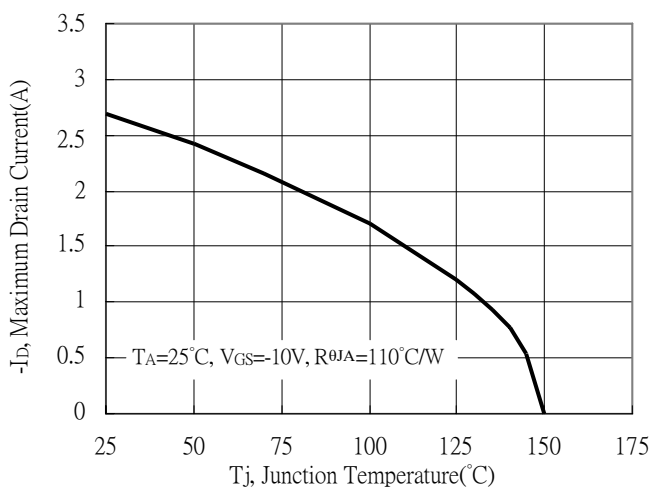
Gate Charge Characteristics



Maximum Safe Operating Area

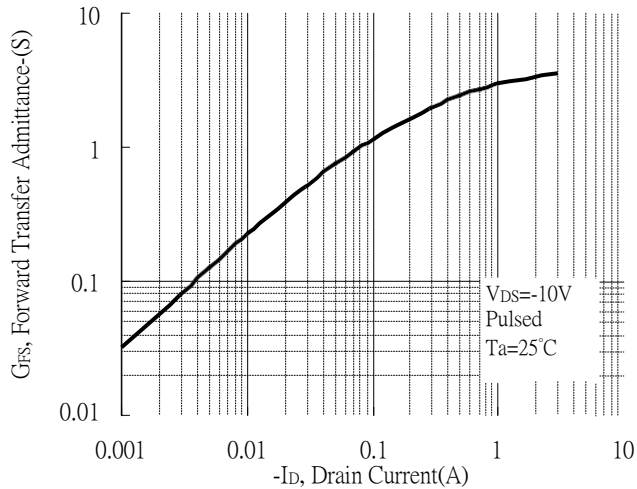


Maximum Drain Current vs Junction Temperature

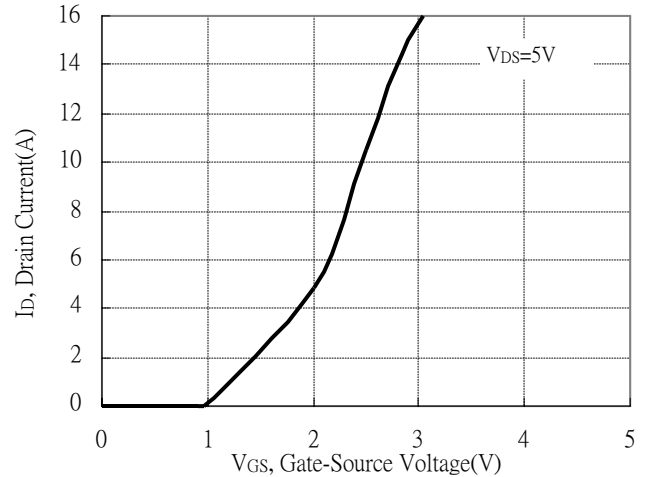


P-channel Typical Characteristics(Cont.)

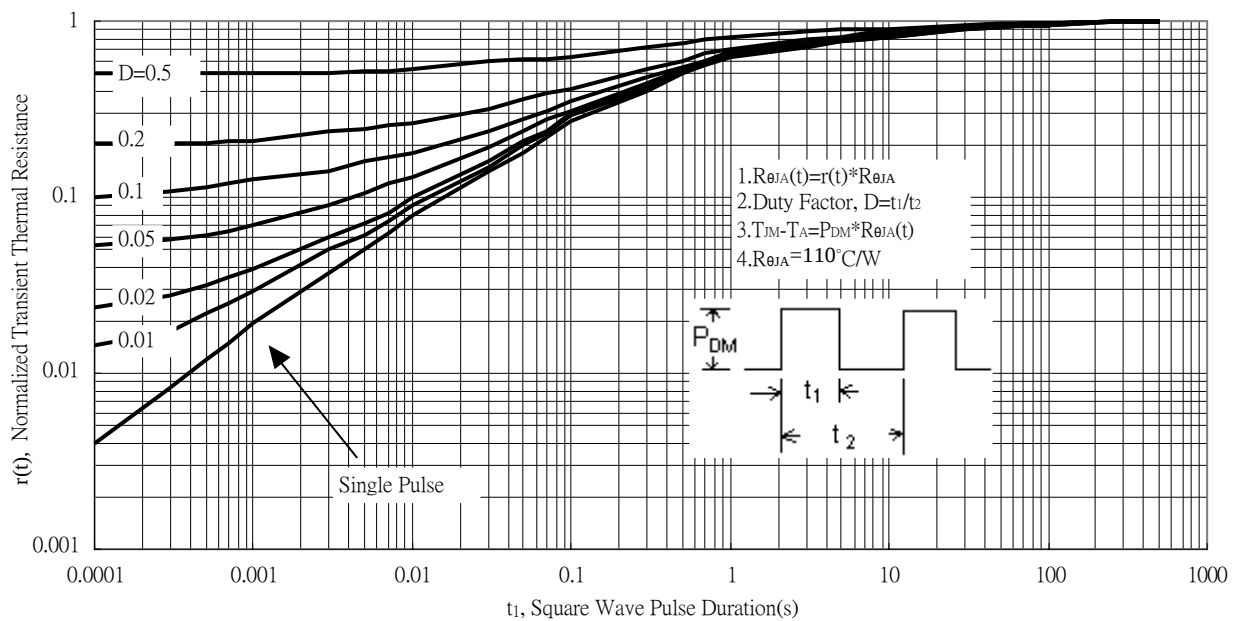
Forward Transfer Admittance vs Drain Current



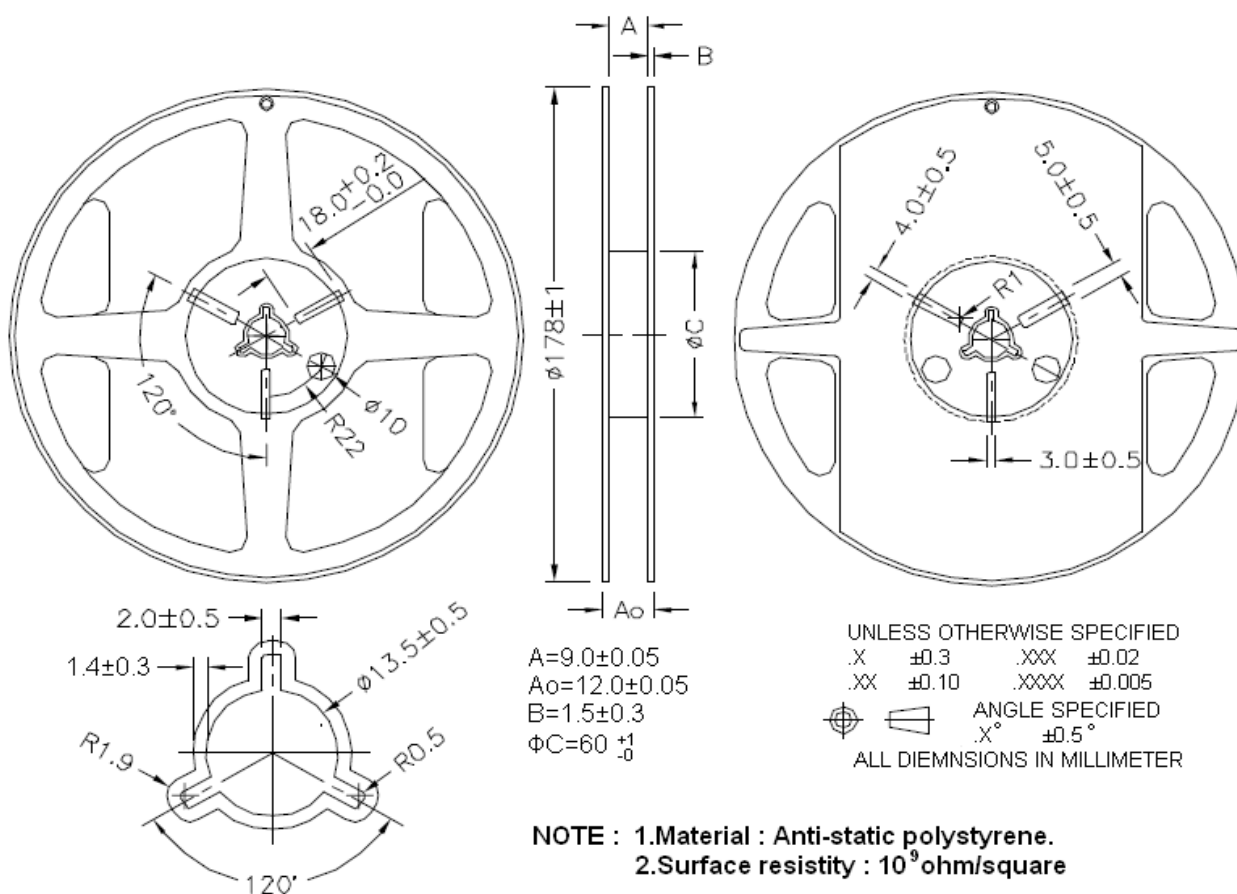
Typical Transfer Characteristics



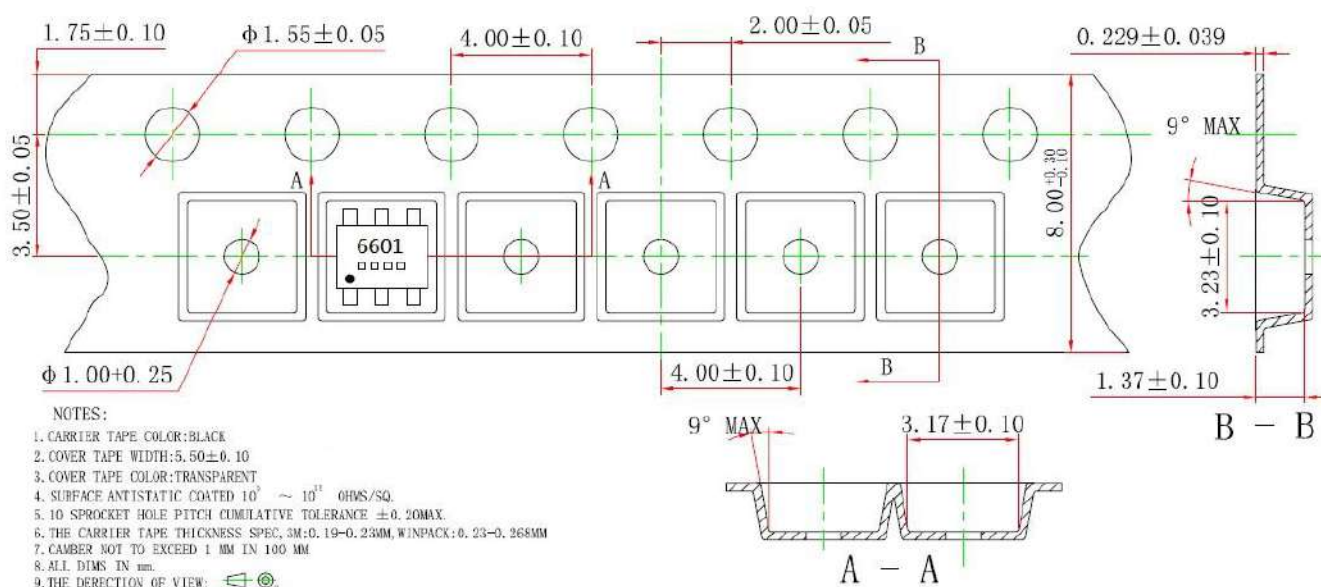
Transient Thermal Response Curves



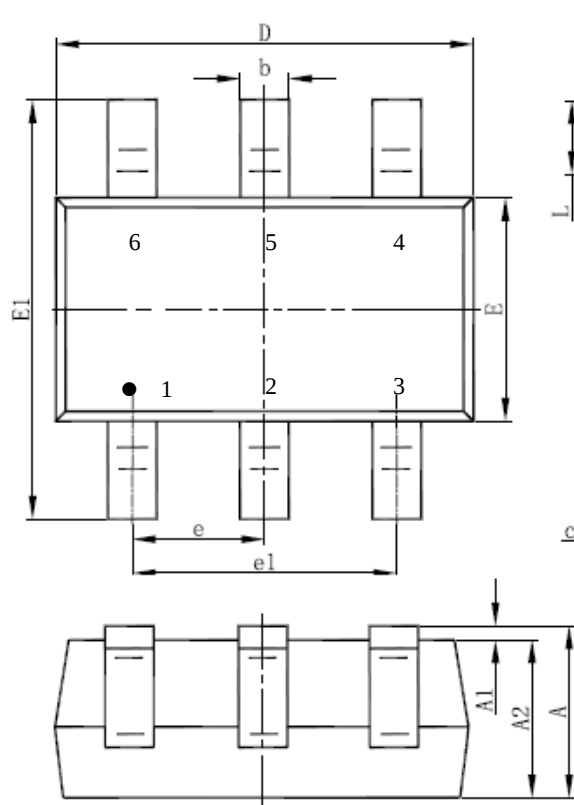
Reel Dimension



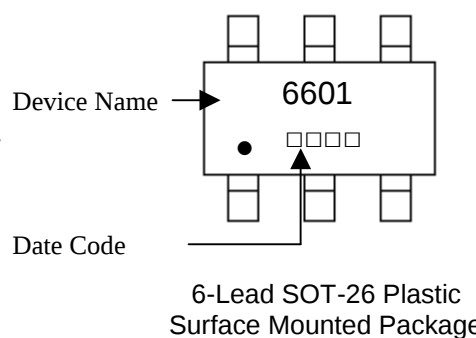
Carrier Tape Dimension



SOT-26 Dimension



Marking:



6-Lead SOT-26 Plastic
Surface Mounted Package

Style:

Pin 1. Gate1 (G1)
 Pin 2. Source 2 (S2)
 Pin 3. Gate 2 (G2)
 Pin 4. Drain 2 (D2)
 Pin 5. Source 1 (S1)
 Pin 6. Drain 1 (D1)

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°