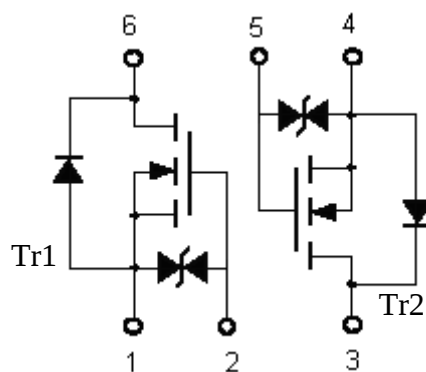
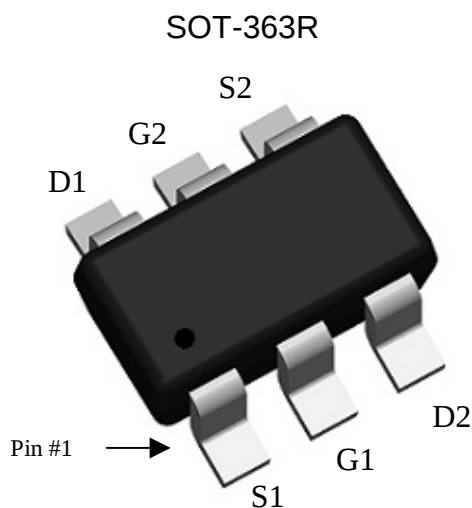


N-CHANNEL MOSFET (dual transistors)

Features:

- ESD protected gate, $\geq 2\text{kV}$ (HBM)
- High speed switching
- Easily designed drive circuits
- Easy to use in parallel
- Pb-free lead plating and halogen-free package



Ordering Information

Device	Package	Shipping
KWDK6R	SOT-363 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

The following characteristics apply to both Tr1 and Tr2

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V _{DSS}	60	V
Gate-Source Voltage	V _{GSS}	±20	
Continuous Drain Current @V _{GS} =10V, T _A =25°C (Note 3)	I _D	320	mA
Continuous Drain Current @V _{GS} =10V, T _A =70°C (Note 3)		256	
Pulsed Drain Current (Notes 1, 2)	I _{DM}	1300	
Power Dissipation (Note 3)	P _D	300	mW
ESD susceptibility (Note 4)	V _{ESD}	2000	V
Operating Junction Temperature Range	T _j	-55~+150	°C
Storage Temperature Range	T _{stg}	-55~+150	

Thermal Performance

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Ambient, max (Note 3)	R _{θJA}	417	°C/W
Thermal Resistance, Junction-to-Case	R _{θJC}	150	

Note : 1. Pulse width limited by maximum junction temperature.
2. Pulse width ≤ 300μs, duty cycle ≤ 2%.
3. Surface mounted on copper pad of FR-4 board with minimum footprint, 2 oz. copper.
4. Human body model, 1.5kΩ in series with 100pF

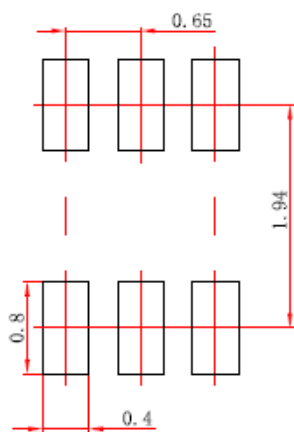
Electrical Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{DSS} *	60	-	-	V	V _{GS} =0V, I _D =10μA
ΔBV _{DSS} /ΔT _j	-	0.06	-	V/°C	Reference to 25°C, I _D =250μA
V _{GS(th)}	1	-	2.5	V	V _{DS} =V _{GS} , I _D =250μA
I _{GSS}	-	-	±10	μA	V _{GS} =±16V, V _{DS} =0V
I _{DSS}	-	-	1		V _{DS} =60V, V _{GS} =0V
	-	-	10		V _{DS} =48V, V _{GS} =0V (T _j =70°C)
R _{DS(ON)} *	-	1.1	2.5	^	I _D =500mA, V _{GS} =10V
	-	1.3	3		I _D =200mA, V _{GS} =4.5V
G _{FS}	100	250	-	mS	V _{DS} =10V, I _D =100mA
C _{iss}	-	26	-	pF	V _{DS} =30V, V _{GS} =0V, f=1MHz
C _{oss}	-	9.7	-		
C _{rss}	-	2.9	-		
t _{d(ON)}	-	3.8	-	ns	V _{DS} =30V, I _D =0.5A, V _{GS} =10V, R _G =1Ω
t _r	-	15.4	-		
t _{d(OFF)}	-	8.6	-		
t _f	-	10.8	-		
Q _g	-	1.7	-	nC	V _{DS} =48V, I _D =1A, V _{GS} =10V
Q _{gs}	-	0.6	-		
Q _{gd}	-	0.6	-		

Source-Drain Diode					
I_S	-	-	0.32	A	
I_{SM}	-	-	1.3		
$*V_{SD}$	-	0.8	1.2	V	$V_{GS}=0V, I_S=0.1A$
$*t_{rr}$	-	9.7	-	ns	$I_F=0.5A, dI_F/dt=100A/\mu s$
$*Q_{rr}$	-	3	-	nC	

*Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

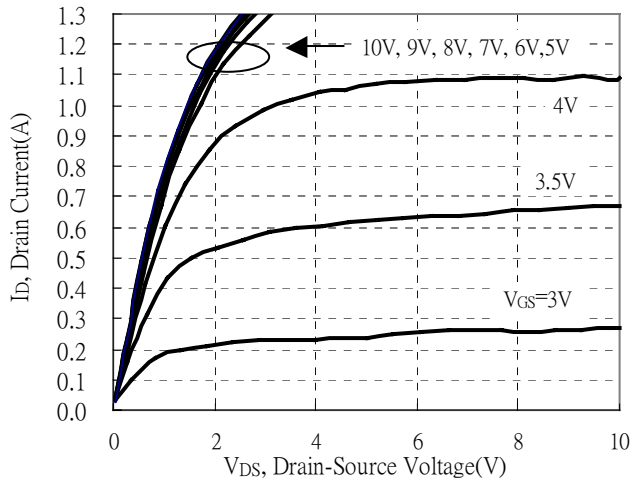
Recommended Soldering Footprint



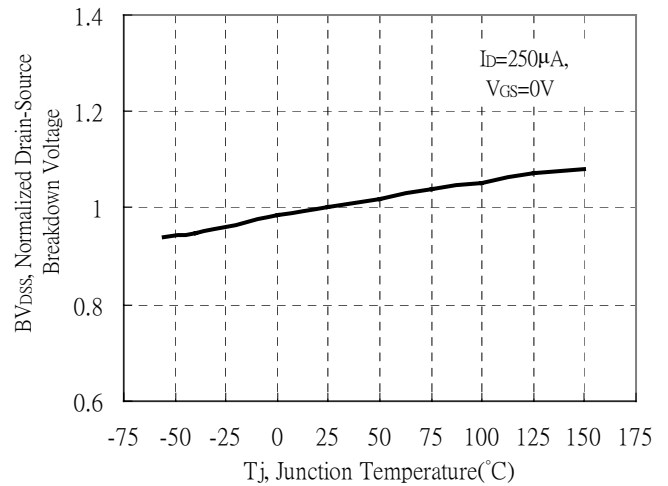
unit : mm

Typical Characteristics

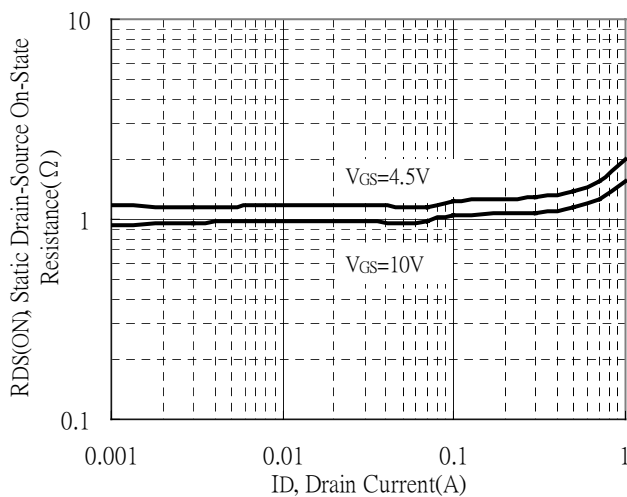
Typical Output Characteristics



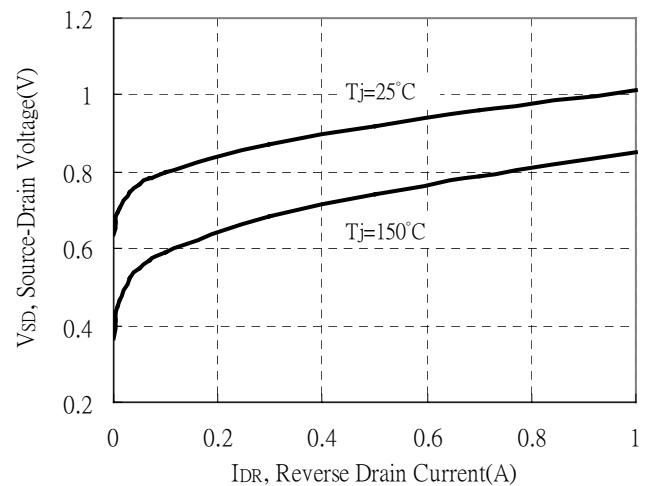
Breakdown Voltage vs Ambient Temperature



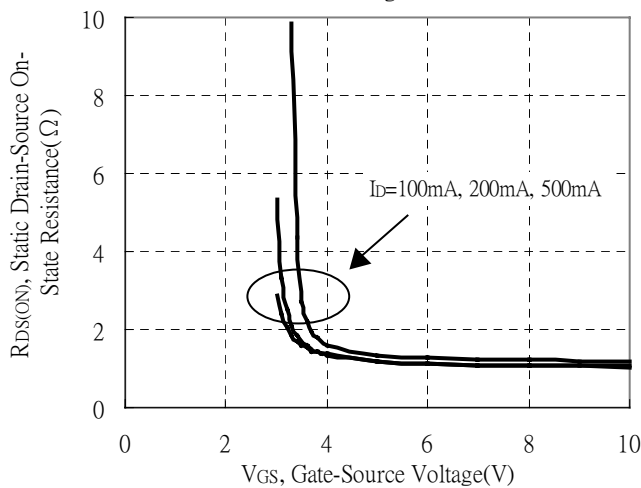
Static Drain-Source On-State resistance vs Drain Current



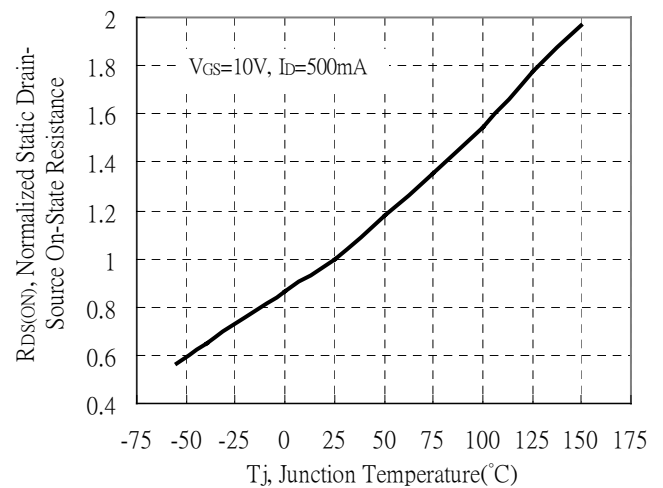
Reverse Drain Current vs Source-Drain Voltage



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

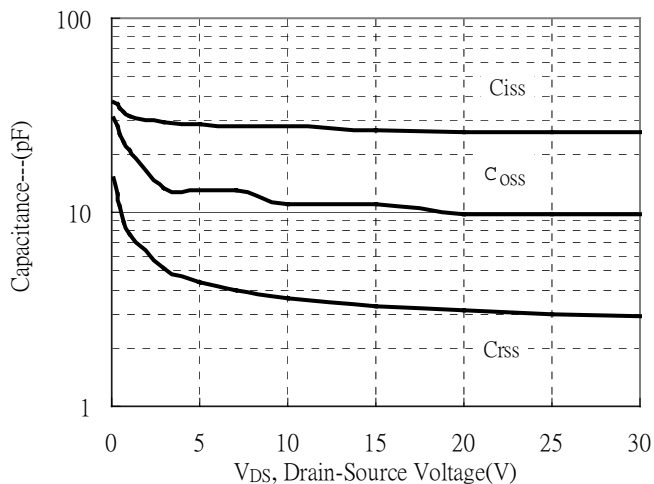


Drain-Source On-State Resistance vs Junction Temperature

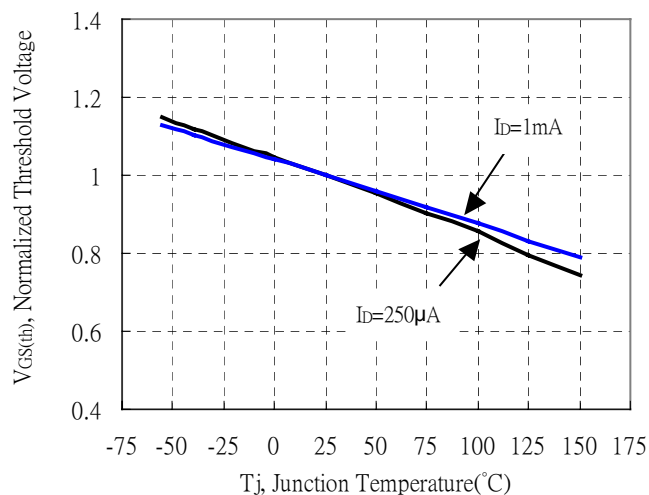


Typical Characteristics(Cont.)

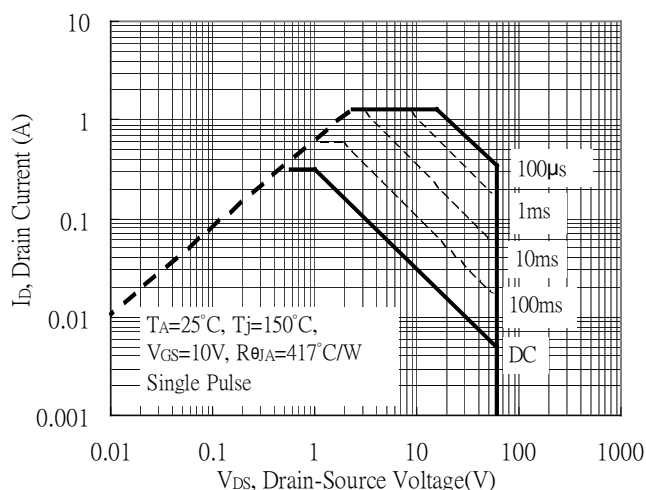
Capacitance vs Drain-to-Source Voltage



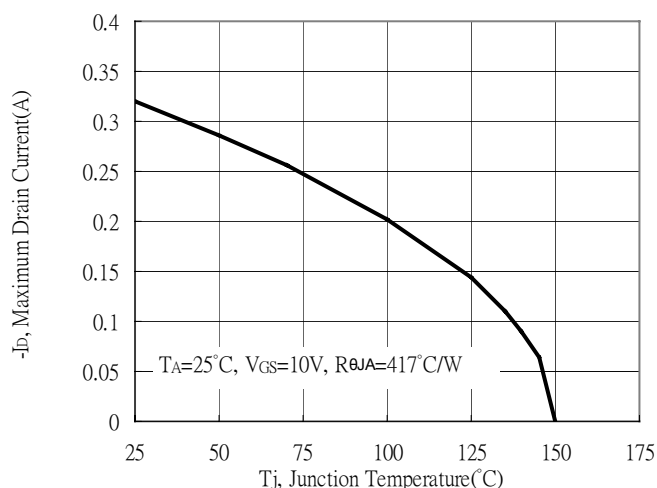
Threshold Voltage vs Junction Temperature



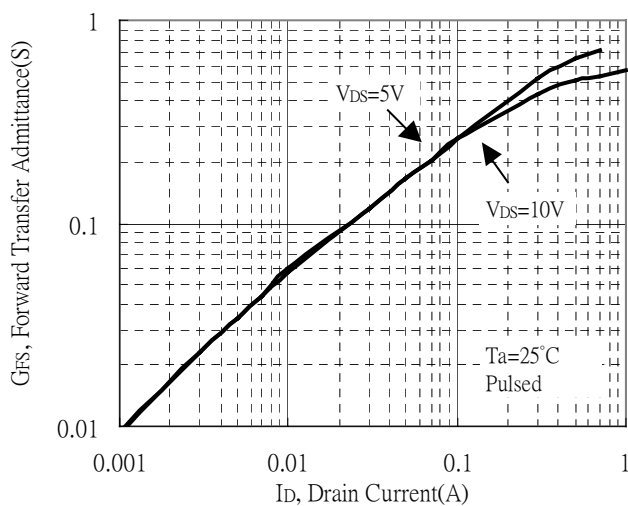
Maximum Safe Operating Area



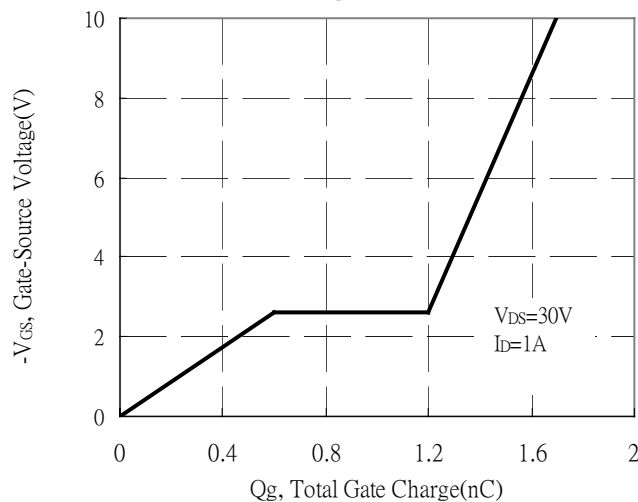
Maximum Drain Current vs Junction Temperature



Forward Transfer Admittance vs Drain Current

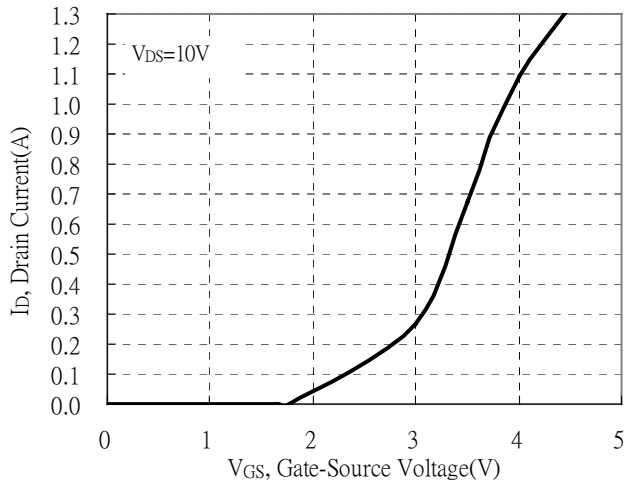


Gate Charge Characteristics

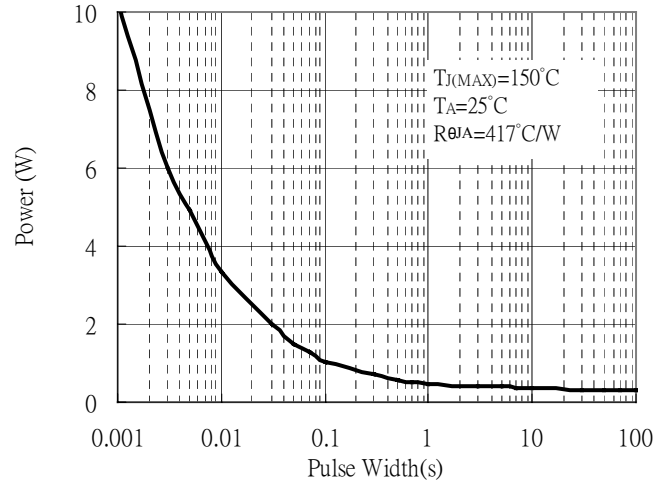


Typical Characteristics(Cont.)

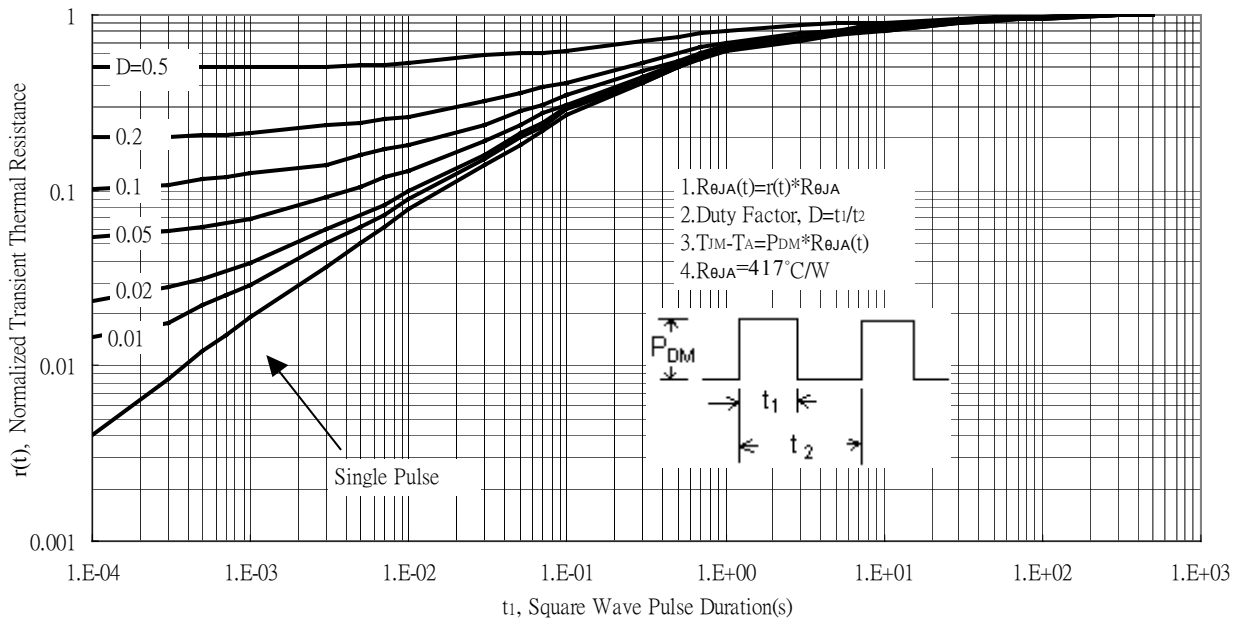
Typical Transfer Characteristics



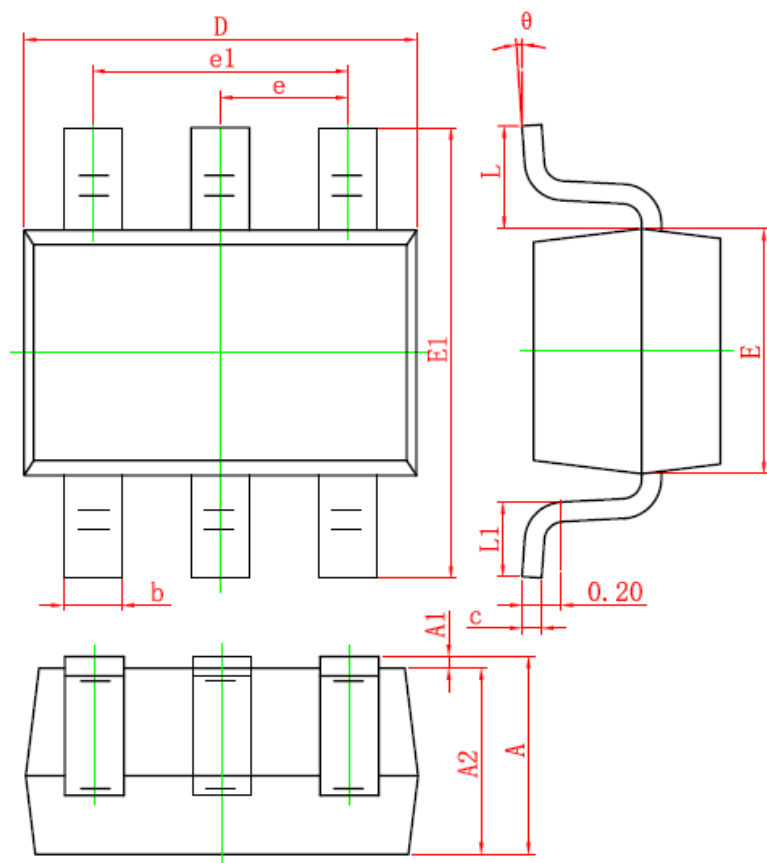
Single Pulse Power Rating, Junction to Ambient
 (Note on page 2)



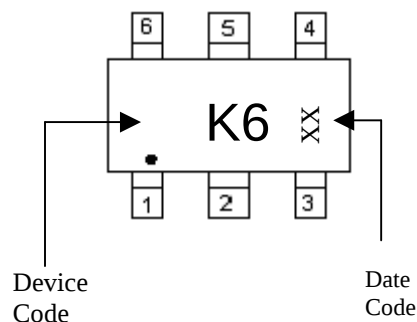
Transient Thermal Response Curves



SOT-363 Dimension



Marking:



6-Lead SOT-363 Plastic
Surface Mounted Package

Style:

- Pin 1. Source1 (S1)
- Pin 2. Gate1 (G1)
- Pin 3. Drain2 (D2)
- Pin 4. Source2 (S2)
- Pin 5. Gate2 (G2)
- Pin 6. Drain1 (D1)

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043	E1	2.150	2.450	0.085	0.096
A1	0.000	0.100	0.000	0.004	e	0.650	TYP	0.026	TYP
A2	0.900	1.000	0.035	0.039	e1	1.200	1.400	0.047	0.055
b	0.150	0.350	0.006	0.014	L	0.525	REF	0.021	REF
c	0.080	0.150	0.003	0.006	L1	0.260	0.460	0.010	0.018
D	2.000	2.200	0.079	0.087	theta	0°	8°	0°	8°
E	1.150	1.350	0.045	0.053					