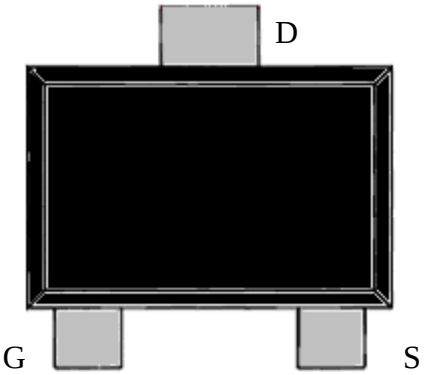
-20V P-CHANNEL Enhancement Mode MOSFET

SOT-723

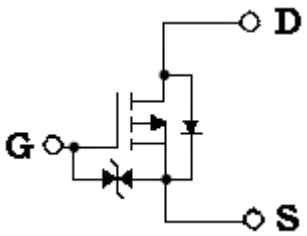


Features:

- Very low level gate drive requirements allowing direct operation in 3V circuits. $V_{GS(th)}$<1.2V.
- Compact industrial standard SOT-723 surface mount package.
- ESD protected gate
- Pb-free lead plating and halogen-free package.

BV_{DSS}	-20V
I_D@ T_A=25°C, V_{GS}=-4.5V	-350mA
R_{DSON}@V_{GS}=-4.5V, I_D=-350mA	0.64Ω (typ)
R_{DSON}@V_{GS}=-4V, I_D=-300mA	0.68Ω (typ)
R_{DSON}@V_{GS}=-2.5V, I_D=-300mA	1.1Ω (typ)
R_{DSON}@V_{GS}=-1.8V, I_D=-150mA	1.7Ω (typ)

KWP3J36Y3



G：Gate
S：Source
D：Drain

Ordering Information

Device	Package	Shipping
KWP3J36Y3	SOT-723 (Pb-free lead plating and halogen-free package)	3000 pcs / tape & reel

Absolute Maximum Ratings (Tj=25°C, unless otherwise noted)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	
Continuous Drain Current @ T_A=25°C, V_{GS}=-4.5V	I_D	-0.35	A
Continuous Drain Current @ T_A=85°C, V_{GS}=-4.5V		-0.25	
Pulsed Drain Current (Note 1)	I_{DM}	-1.4	
Maximum Power Dissipation @ T_A=25℃	P_D	150	mW
Thermal Resistance, Junction-to-Ambient	$R_{th,ja}$	833	°C/W
Operating Junction and Storage Temperature	Tj, Tstg	-55~+150	°C

Note : 1. Pulse width≤ 10μs, duty cycle≤2%.

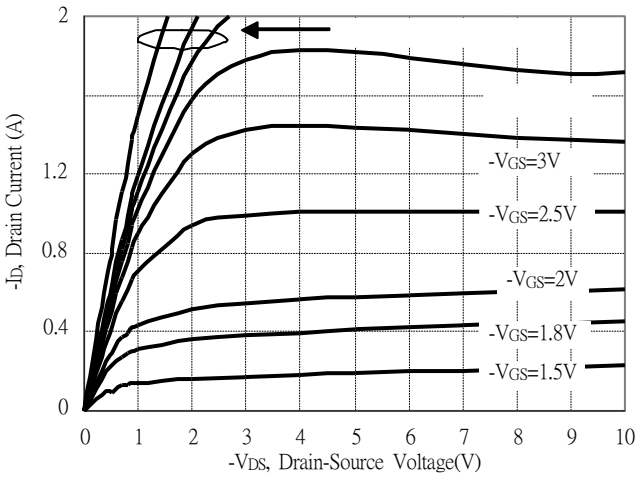
Electrical Characteristics (Tj=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	-20	-	-	V	V_{GS}=0V, I_D=-250μA
$V_{GS(th)}$	-0.5	-0.8	-1.2		V_{DS}=V_{GS}, I_D=-250μA
G_{FS}	-	0.4	-	S	V_{DS}=-3V, I_D=-100mA
I_{GSS}	-	-	±10	μA	V_{GS}=±10V, V_{DS}=0V
I_{DSS}	-	-	-1		V_{DS}=-20V, V_{GS}=0V
	-	-	-10		V_{DS}=-20V, V_{GS}=0V, Tj=55°C
*$R_{DS(ON)}$	-	0.64	0.9	Ω	V_{GS}=-4.5V, I_D=-350mA
	-	0.68	0.9		V_{GS}=-4V, I_D=-300mA
	-	1.1	1.4		V_{GS}=-2.5V, I_D=-300mA
	-	1.7	2.7		V_{GS}=-1.8V, I_D=-150mA
Dynamic					
Ciss	-	59	-	pF	V_{DS}=-10V, V_{GS}=0V, f=1MHz
Coss	-	21	-		
Crss	-	15	-		
*$t_{d(ON)}$	-	5	-	ns	V_{DS}=-10V, I_D=-200mA, V_{GS}=-4.5V, R_G=10Ω
*t_r	-	6	-		
*$t_{d(OFF)}$	-	42	-		
*t_f	-	14	-		
*Qg	-	1.5	-	nC	V_{DS}=-10V, I_D=-250mA, V_{GS}=-4.5V
*Qgs	-	0.28	-		
*Qgd	-	0.44	-		
Source-Drain Diode					
*I_S	-	-	-0.35	A	
*I_{SM}	-	-	-1.4		
*V_{SD}	-	-0.88	-1.2	V	V_{GS}=0V, I_S=-150mA

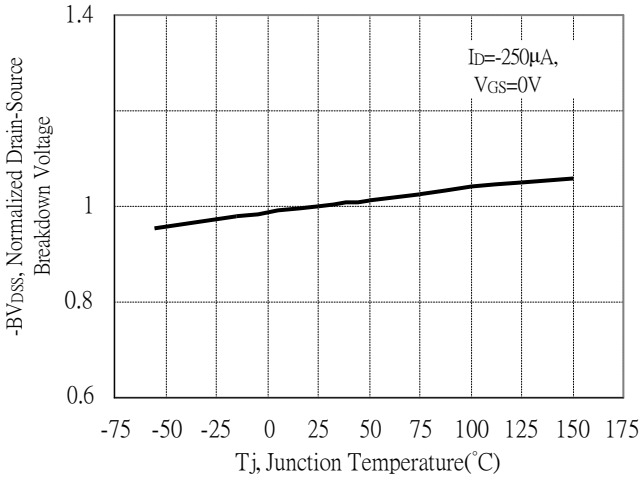
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Typical Characteristics

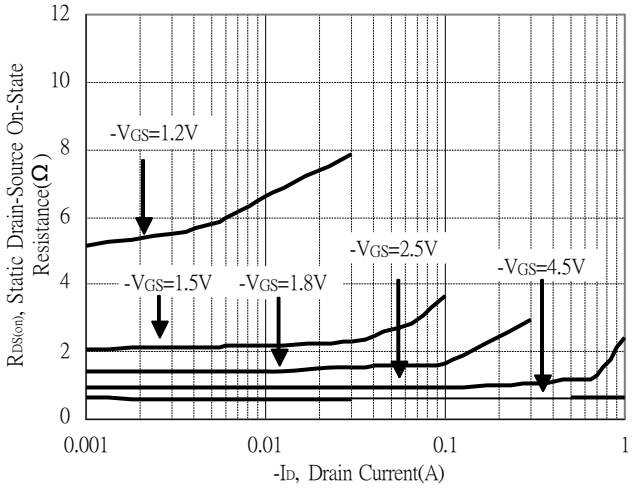
Typical Output Characteristics



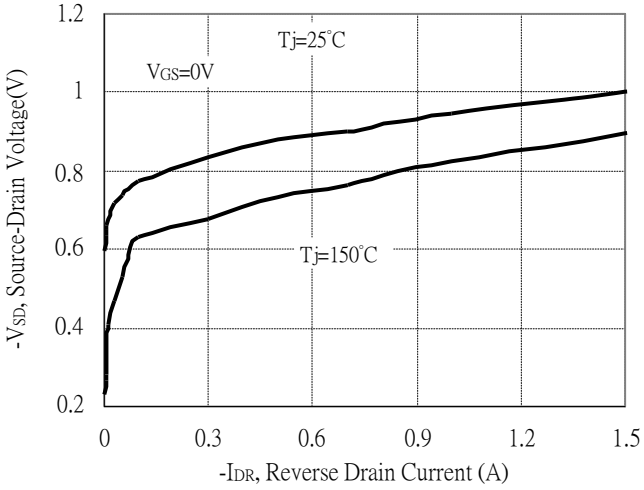
Brekdown Voltage vs Ambient Temperature



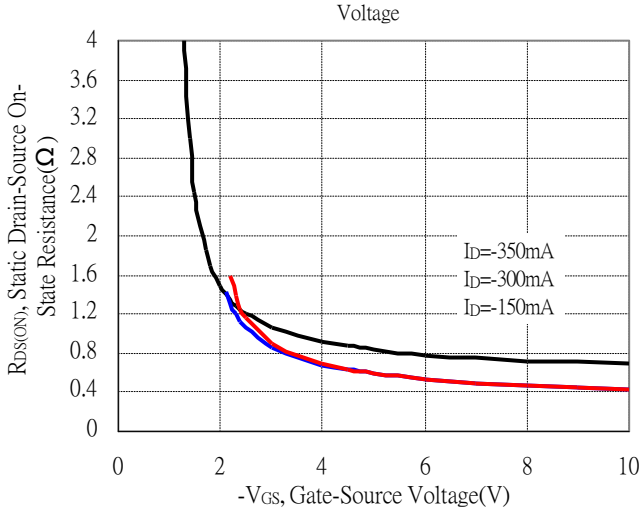
Static Drain-Source On-State resistance vs Drain Current



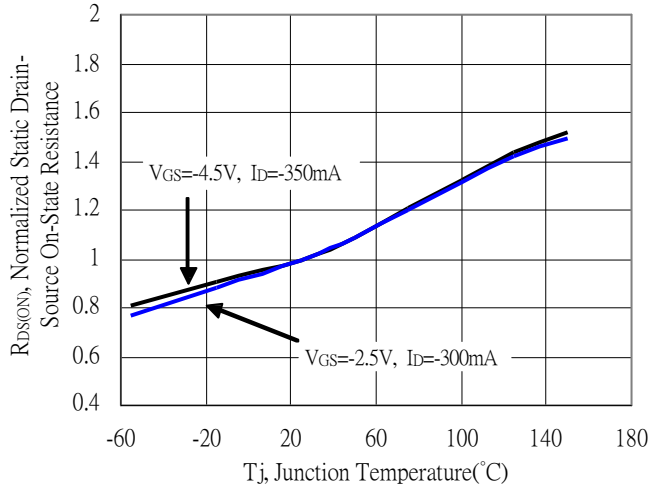
Reverse Drain Current vs Source-Drain Voltage



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

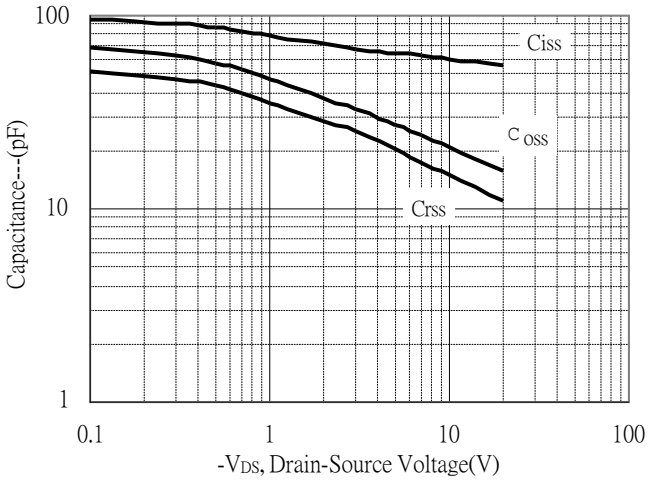


Drain-Source On-State Resistance vs Junction Tempearture

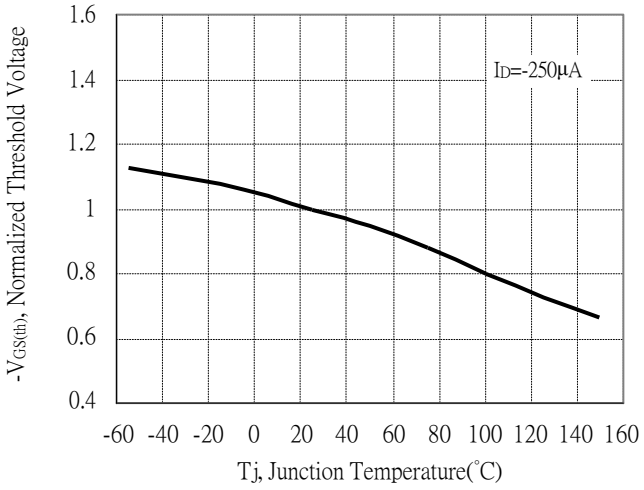


Typical Characteristics(Cont.)

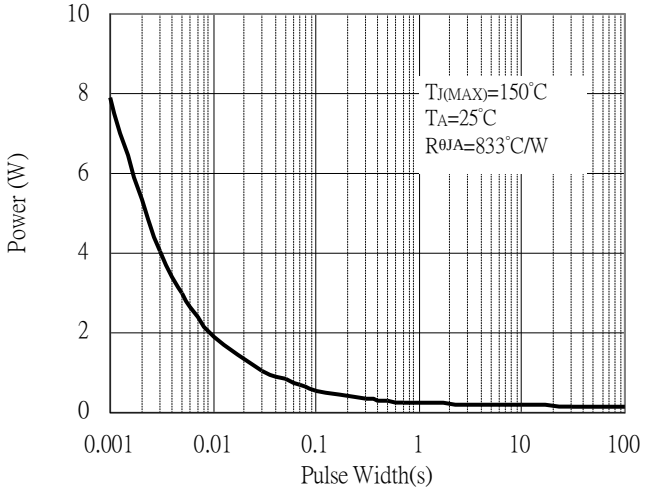
Capacitance vs Drain-to-Source Voltage



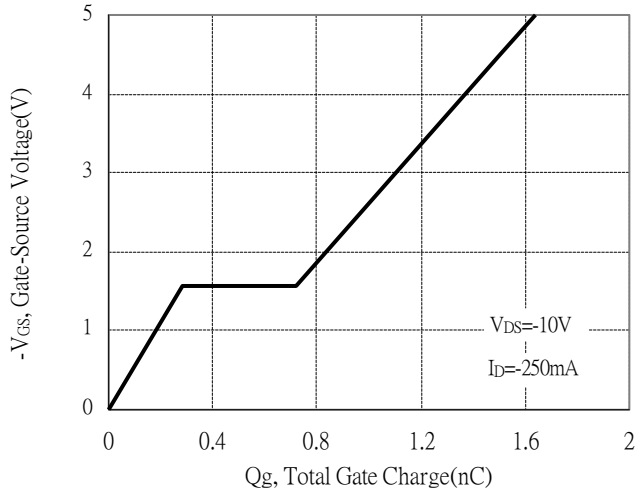
Threshold Voltage vs Junction Tempearture



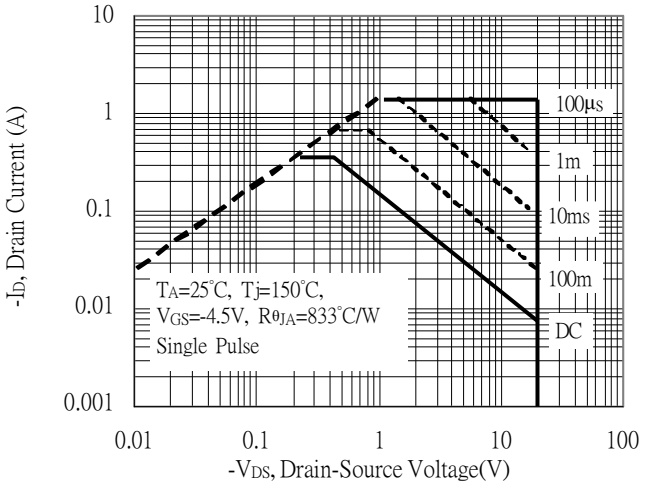
Single Pulse Power Rating, Junction to Ambient



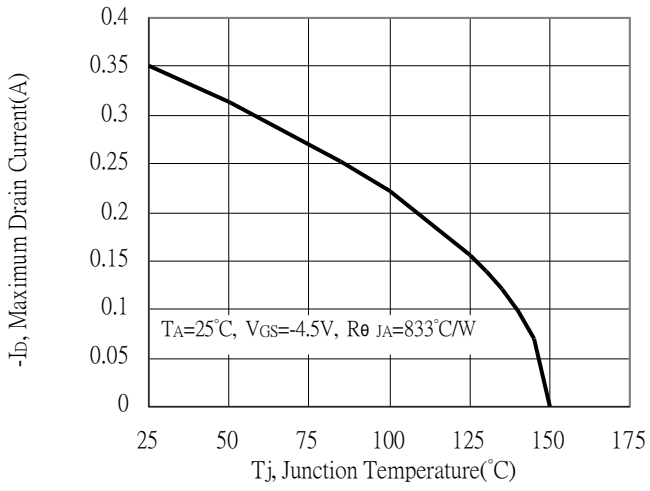
Gate Charge Characteristics



Maximum Safe Operating Area

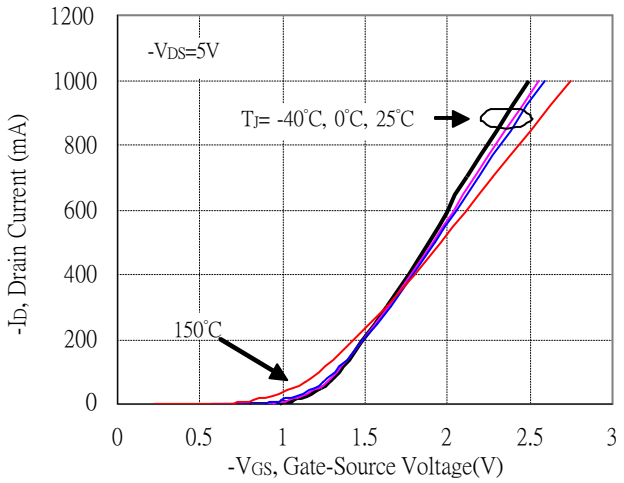


Maximum Drain Current vs JunctionTemperature

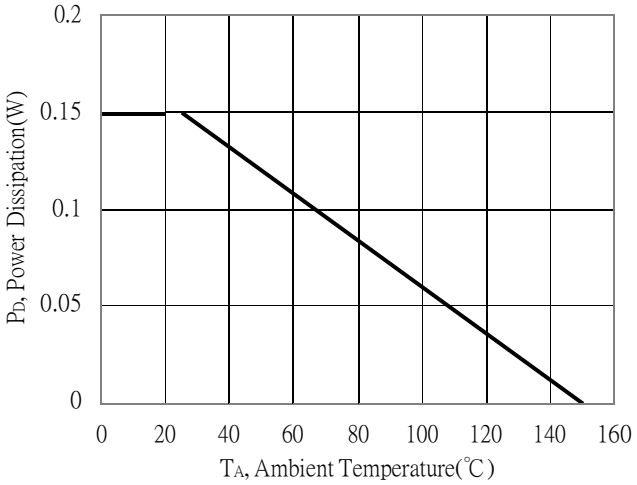


Typical Characteristics(Cont.)

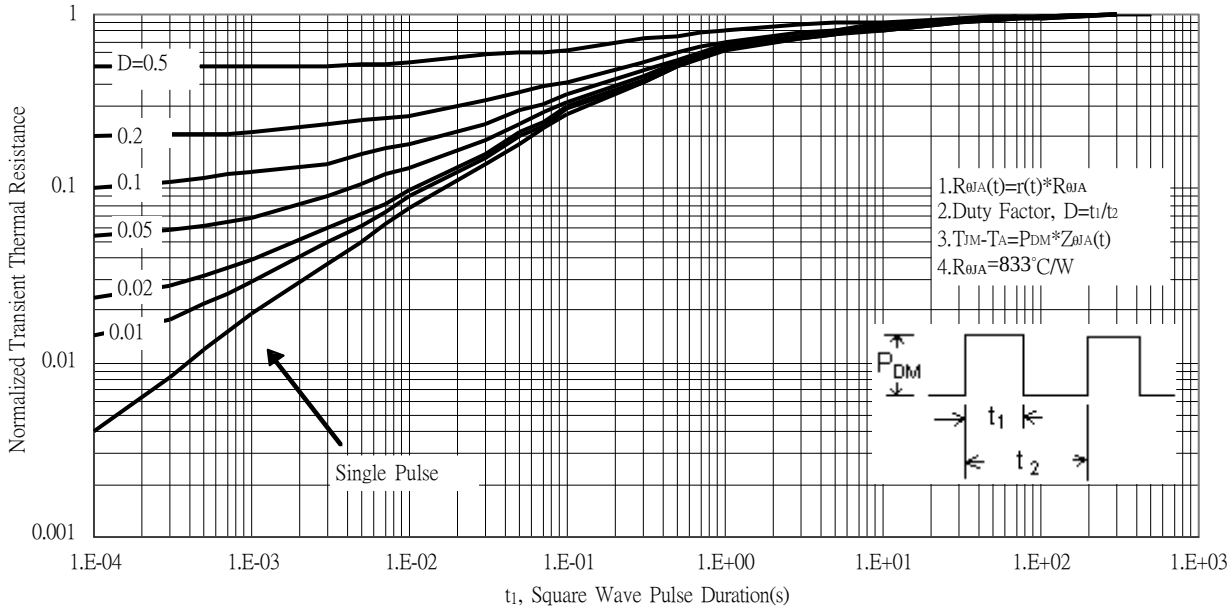
Typical Transfer Characteristics



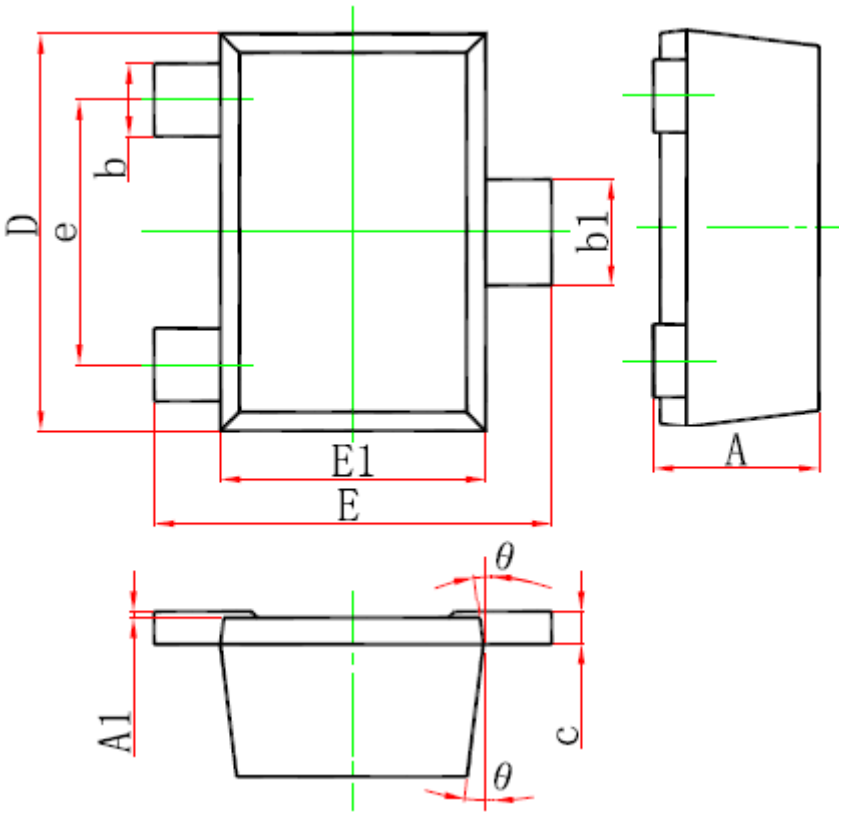
Power Derating Curve



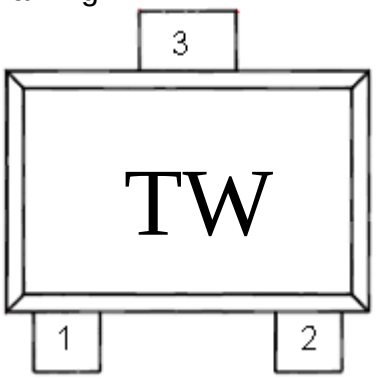
Transient Thermal Response Curves



SOT-723 Dimension



Marking:



3-Lead SOT-723 Plastic
Surface Mounted Package
Code: Y3

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

*Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.000	0.500	0.000	0.020	D	1.150	1.250	0.045	0.049
A1	0.000	0.050	0.000	0.002	E	1.150	1.250	0.045	0.049
b	0.170	0.270	0.007	0.011	E1	0.750	0.850	0.030	0.033
b1	0.270	0.370	0.011	0.015	e	0.800*		0.031*	
c	0.000	0.150	0.000	0.006	θ	7° REF		7° REF	