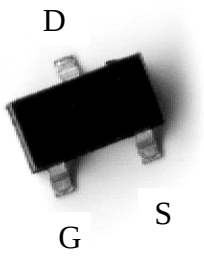
30V P-CHANNEL Enhancement Mode MOSFET

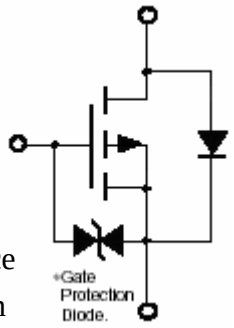
SOT-323



Features:

- Ultra high speed switching.
- Low gate charge.
- 2.5V drive.
- Pb-free package.

BV_{DSS}	-30V
I_D	-230mA
$R_{DSON(typ)}$	3Ω@-4V
	4.6Ω@-2.5V
	10.9Ω@-1.5V



G：Gate
S：Source
D：Drain

Ordering Information

Device	Package	Shipping
KWP3LP01S3	SOT-323 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

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

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	-230	mA
Pulsed Drain Current (Note 1)	I_{DM}	-920	mA
Maximum Power Dissipation (Note 2)	P_D	200	mW
Thermal Resistance, Junction-to-Ambient	$R_{th,ja}$	625	°C/W
Operating Junction and Storage Temperature	Tj, Tstg	-55~+150	°C

Note : 1. Pulse width≤ 10μs, duty cycle≤1%.
2. When mounted on a glass epoxy with a dimension of 100mm²×1mm.

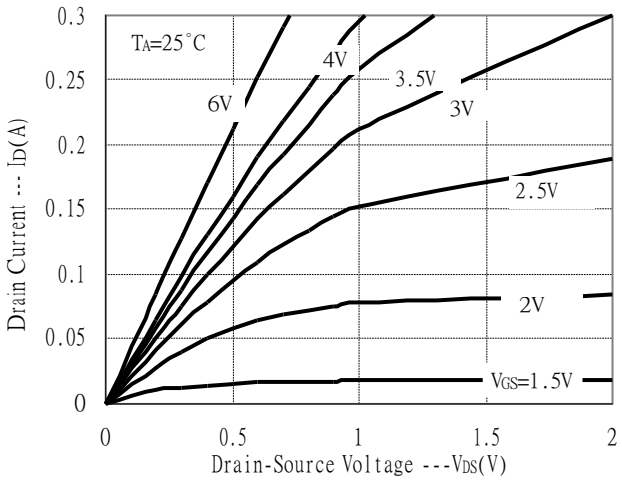
Electrical Characteristics (Ta=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	-30	-	-	V	V_{GS}=0V, I_D=-250μA
$V_{GS(th)}$	-0.6	0.9	-1.1	V	V_{DS}=-10V, I_D=-100μA
G_{FS}	100	210	-	mS	V_{DS}=-10V, I_D=-100mA
I_{GSS}	-	-	±1	μA	V_{GS}=±8V, V_{DS}=0
I_{DSS}	-	-	-1	μA	V_{DS}=-30V, V_{GS}=0
	-	-	-10		V_{DS}=-24V, V_{GS}=0; Tj=125°C
*$R_{DS(ON)}$	-	3	5	Ω	V_{GS}=-4V, I_D=-100mA
	-	4.6	8		V_{GS}=-2.5V, I_D=-30mA
	-	10.9	18		V_{GS}=-1.5V, I_D=-1mA
Dynamic					
Ciss	-	35.7	-	pF	V_{DS}=-20V, V_{GS}=0, f=1MHz
Coss	-	11.9	-		
Crss	-	3.7	-		
*$t_{d(ON)}$	-	26.4	-	ns	V_{DS}=-15V, I_D=-100mA, V_{GS}=-4V, R_L=150Ω, R_G=50Ω
*t_r	-	12.8	-		
*$t_{d(OFF)}$	-	31.5	-		
*t_f	-	46.4	-		
*Qg	-	0.78	-	nC	V_{DS}=-10V, I_D=-100mA, V_{GS}=-10V
*Qgs	-	0.1	-		
*Qgd	-	0.1	-		
Source-Drain Diode					
*I_S	-	-	-230	mA	
*I_{SM}	-	-	-920		
*V_{SD}	-	0.83	-1.2	V	V_{GS}=0V, I_S=-100mA

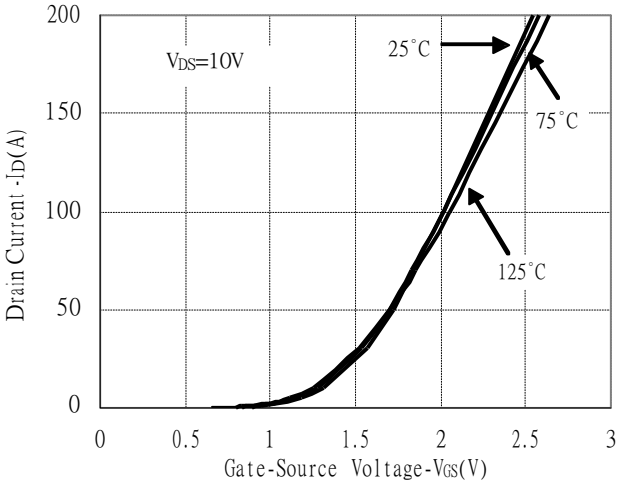
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Typical Characteristics(The minus sign in voltage and current is omitted)

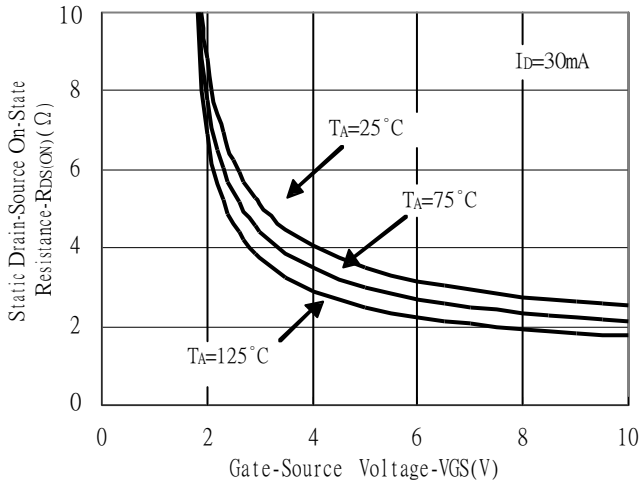
Typical Output Characteristics



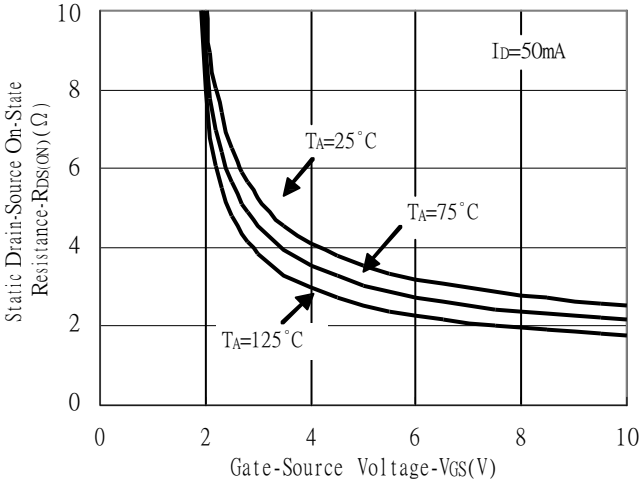
Typical Transfer Characteristics



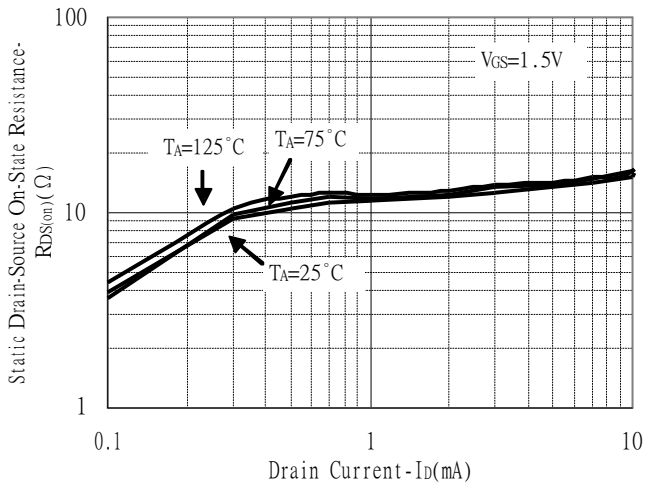
Static Drain-Source On-State Resistance vs Gate-Source Voltage



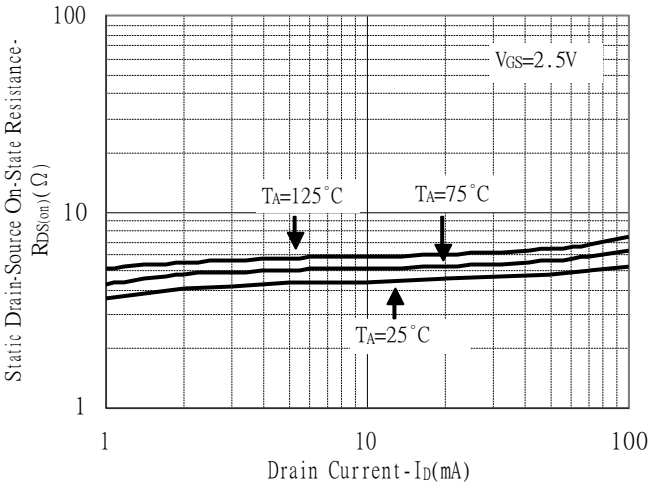
Static Drain-Source On-State Resistance vs Gate-Source Voltage



Static Drain-Source On-State resistance vs Drain Current

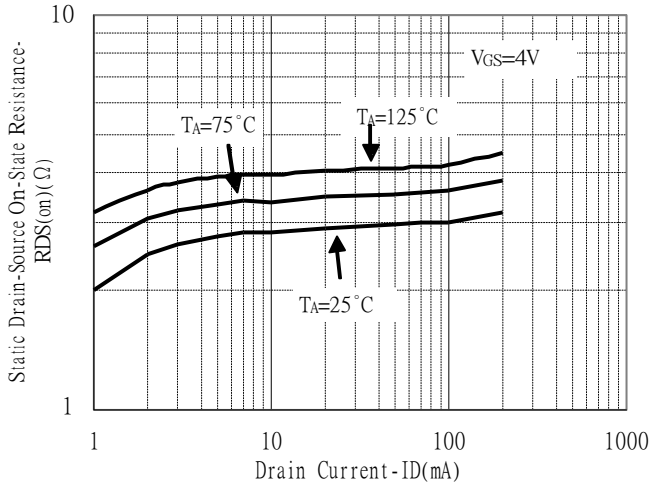


Static Drain-Source On-State resistance vs Drain Current

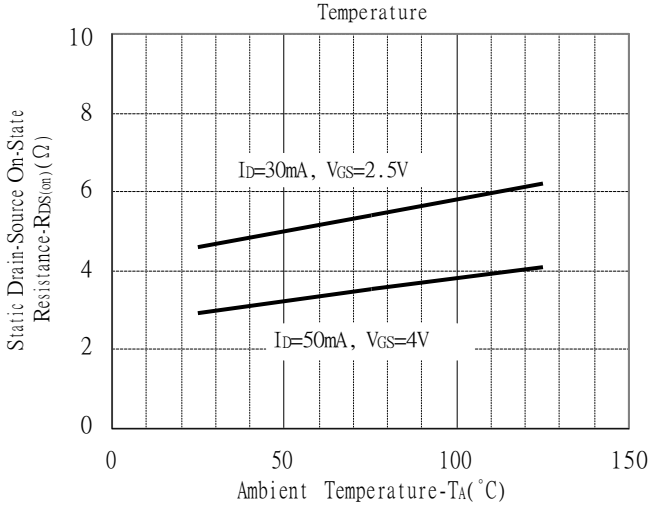


Typical Characteristics(Cont.)

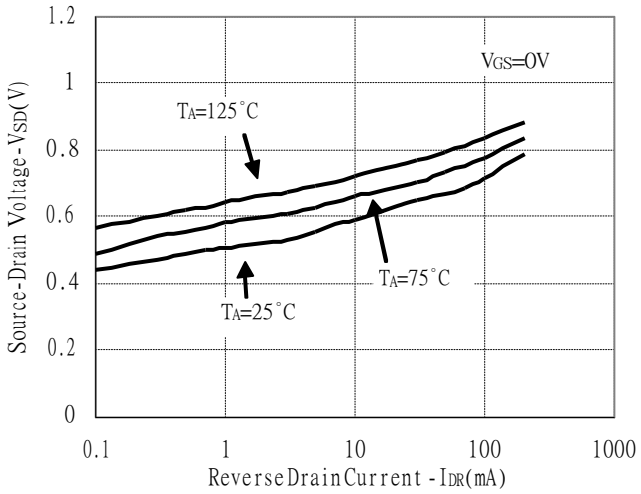
Static Drain-Source On-State resistance vs Drain Current



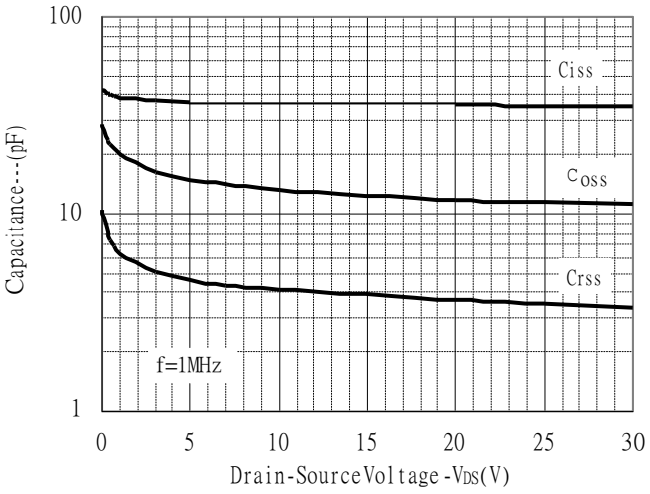
Static Drain-Source On-State resistance vs Ambient Temperature



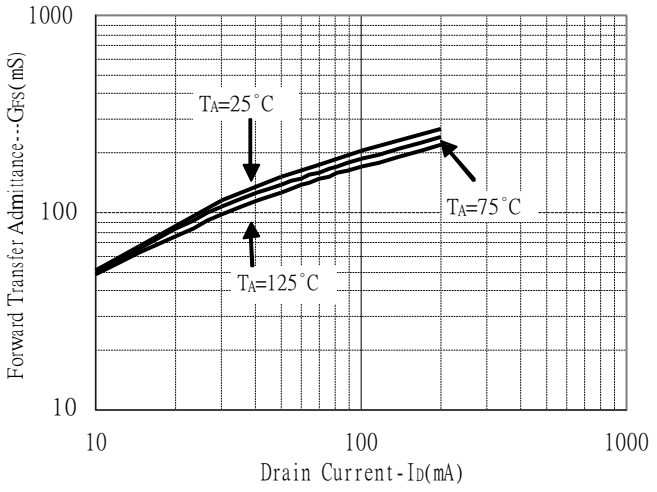
Reverse Drain Current vs Source-Drain Voltage



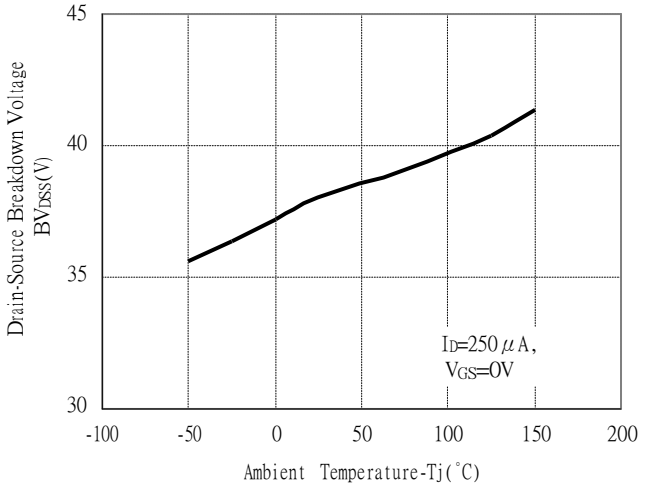
Capacitance vs Drain-to-Source Voltage



Forward Transfer Admittance vs Drain Current

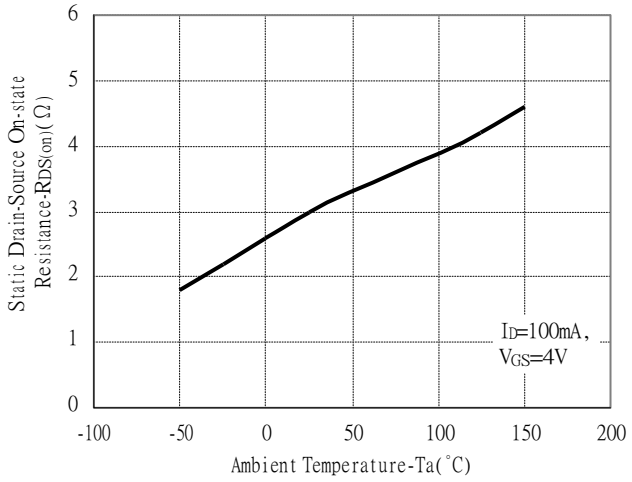


Brekdown Voltage vs Ambient Temperature

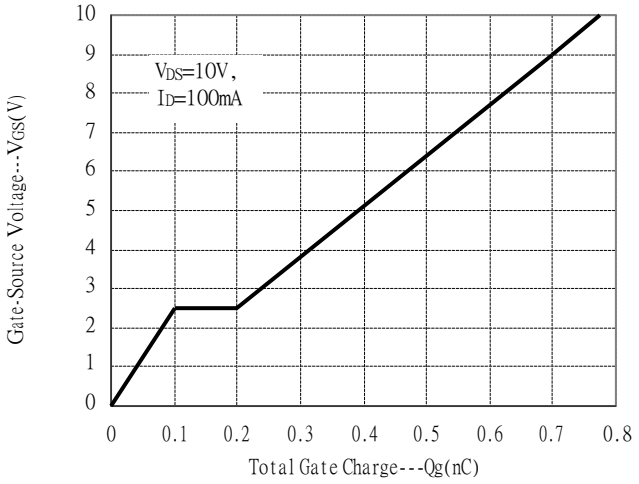


Typical Characteristics(Cont.)

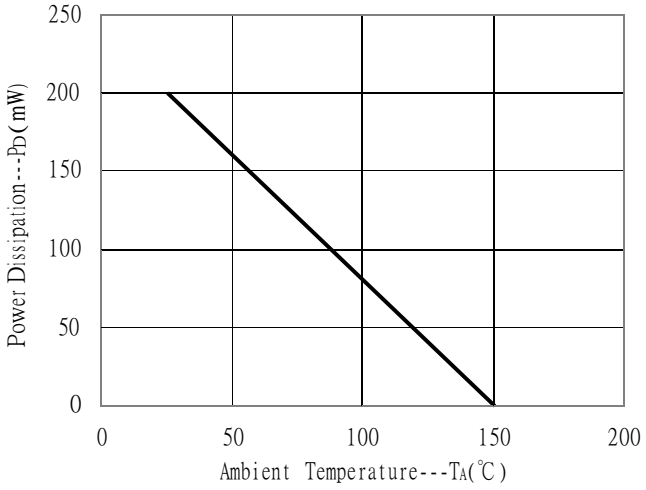
Static Drain-Source On-resistance vs Ambient Temperature



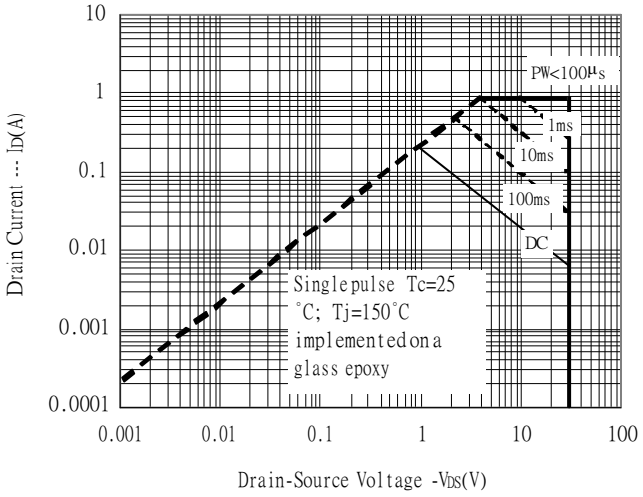
Gate Charge Characteristics



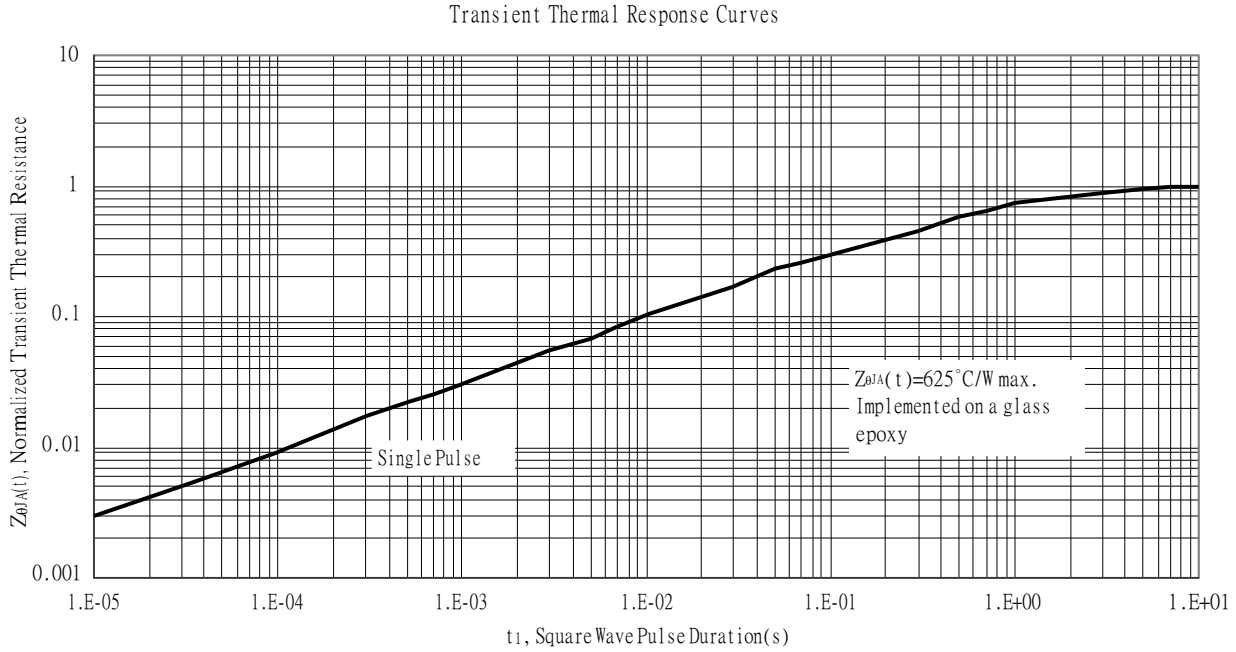
Power Derating Curves



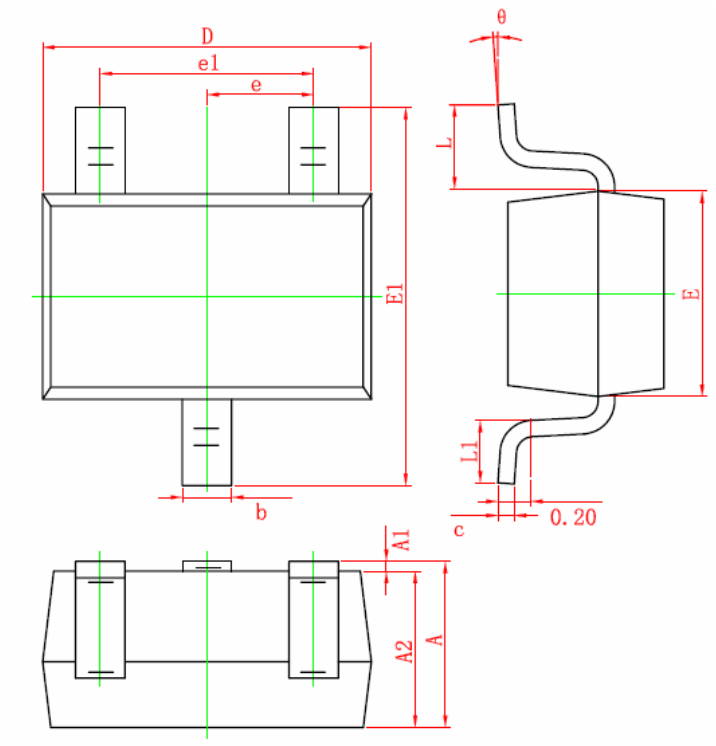
Maximum Safe Operating Area



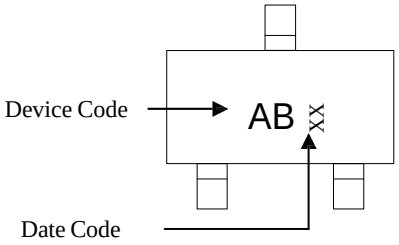
Typical Characteristics(Cont.)



SOT-323 Dimension



Marking:



3-Lead SOT-323 Plastic
Surface Mounted Package
Code: S3

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

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	0.200	0.400	0.008	0.016	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	θ	0°	8°	0°	8°
E	1.150	1.350	0.045	0.053					