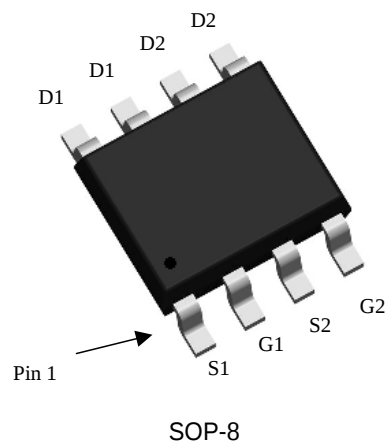


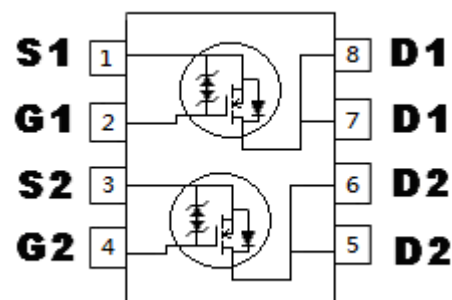
Dual N-Channel Enhancement Mode Power MOSFET

Features:

- Simple drive requirement
- Low on-resistance
- Fast switching speed
- Dual N-ch MOSFET package
- ESD protected gate
- Pb-free lead plating & Halogen-free package



B_VD_{SS}	100V
I_D@V_{GS}=10V, T_A=25°C	2.5A
I_D@V_{GS}=10V, T_A=70°C	2.0A
R_{DSON}@V_{GS}=10V, I_D=2A	100mΩ (typ)
R_{DSON}@V_{GS}=4.5V, I_D=2A	119mΩ (typ)



G : Gate D : Drain S : Source

Ordering Information

Device	Package	Shipping
KSCB100A10KR	SOP-8 (Pb-free lead plating and halogen-free package)	2500 pcs / tape & reel

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V _{DS}	100	V
Gate-Source Voltage	V _{GS}	±20	
Continuous Drain Current @ V _{GS} =10V, T _C =25°C	I _D	4.4	A
Continuous Drain Current @ V _{GS} =10V, T _C =100°C		2.8	
Continuous Drain Current @ V _{GS} =10V, T _A =25°C		2.5 (Note 2)	
Continuous Drain Current @ V _{GS} =10V, T _A =70°C		2.0 (Note 2)	
Pulsed Drain Current	I _{DM}	16 (Note 1)	
Avalanche Current @ L=0.1mH	I _{AS}	16	mJ
Avalanche Energy @ L=1mH, I _D =8A, V _{DD} =25V	E _{AS}	32 (Note 4)	
Power Dissipation for Dual Operation	P _D	2	W
Power Dissipation for Single Operation		1.6 (Note 2)	
		0.9 (Note 3)	
Operating Junction and Storage Temperature Range	T _j , T _{stg}	-55~+150	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	R _{θJC}	25	°C/W
Thermal Resistance, Junction-to-ambient, max, dual	R _{θJA}	62.5	
Thermal Resistance, Junction-to-ambient, max , single operation		78 (Note 2)	
		135 (Note 3)	

- Note : 1. Pulse width limited by maximum junction temperature
2. Surface mounted on 1 in² copper pad of FR-4 board, pulse width≤10s.
3. Surface mounted on minimum copper pad, pulse width≤10s.
4. 100% tested by conditions of L=0.1mH, V_{GS}=10V, I_{AS}=8A, V_{DD}=25V.

Characteristics (T_j=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	100	-	-	V	V _{GS} =0V, I _D =250μA
V _{GS(th)}	1	-	2.5		V _{DS} =V _{GS} , I _D =250μA
G _{FS} *1	-	5	-	S	V _{DS} =10V, I _D =3A
I _{GSS}	-	-	±10	μA	V _{GS} =±16V, V _{DS} =0V
I _{DSS}	-	-	1		V _{DS} =80V, V _{GS} =0V
	-	-	25		V _{DS} =80V, V _{GS} =0V, T _j =70°C
R _{DS(ON)} *1	-	100	130	mΩ	V _{GS} =10V, I _D =2A
	-	119	167		V _{GS} =4.5V, I _D =2A
Dynamic					
Q _g *1, 2	-	7.7	11.6	nC	V _{DS} =50V, I _D =2.5A, V _{GS} =10V
Q _{gs} *1, 2	-	1.5	-		
Q _{gd} *1, 2	-	1.3	-		

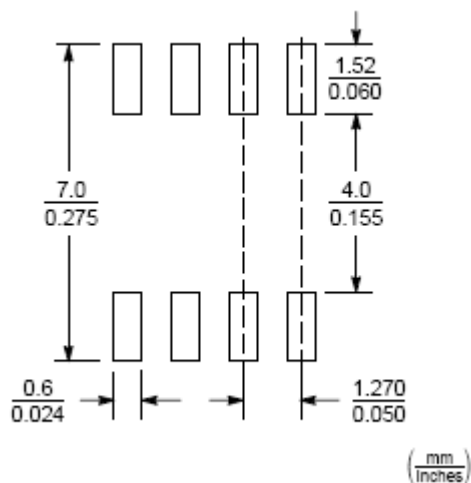
$t_{d(ON)}$ *1, 2	-	6	9	ns	$V_{DS}=50V, I_D=2.5A, V_{GS}=10V, R_G=6\Omega$
t_r *1, 2	-	17	25.5		
$t_{d(OFF)}$ *1, 2	-	20.4	30.6		
t_f *1, 2	-	5.4	8.1		
C_{iss}	-	389	584	pF	$V_{GS}=0V, V_{DS}=50V, f=1MHz$
C_{oss}	-	29	43.5		
C_{rss}	-	7.7	11.5		
R_g	-	5	-	Ω	$f=1MHz$
Source-Drain Diode					
I_S *1	-	-	2.5	A	
I_{SM} *3	-	-	10		
V_{SD} *1	-	0.83	1.2	V	$I_S=2A, V_{GS}=0V$
t_{rr} *1	-	17.9	-	ns	$I_F=2.5A, dI_F/dt=100A/\mu s$
Q_{rr} *1	-	16.3	-	nC	

Note : *1.Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

*2.Independent of operating temperature

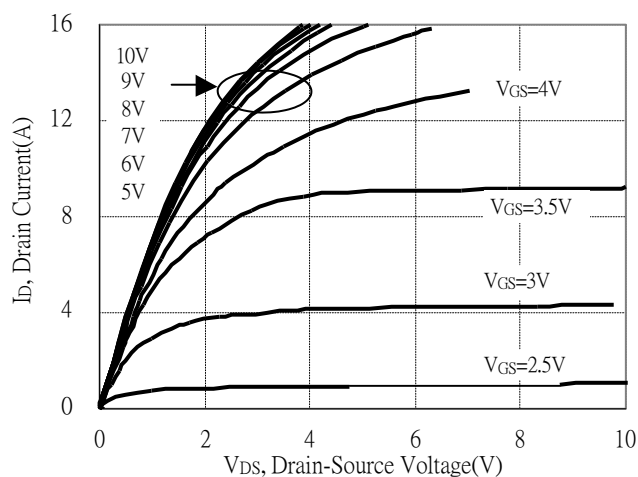
*3.Pulse width limited by maximum junction temperature.

Recommended Soldering Footprint

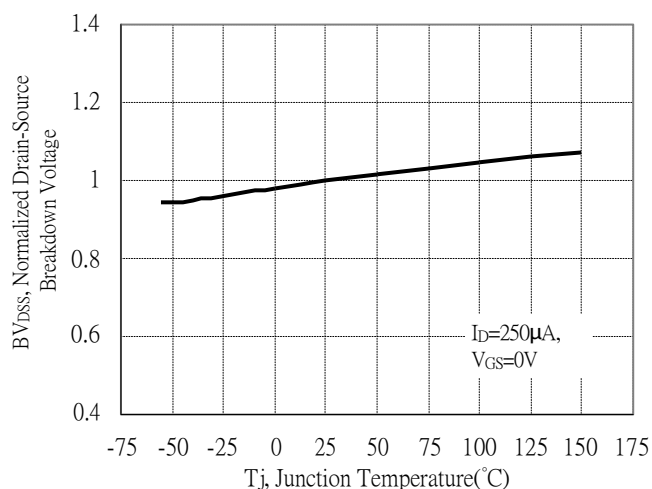


Typical Characteristics

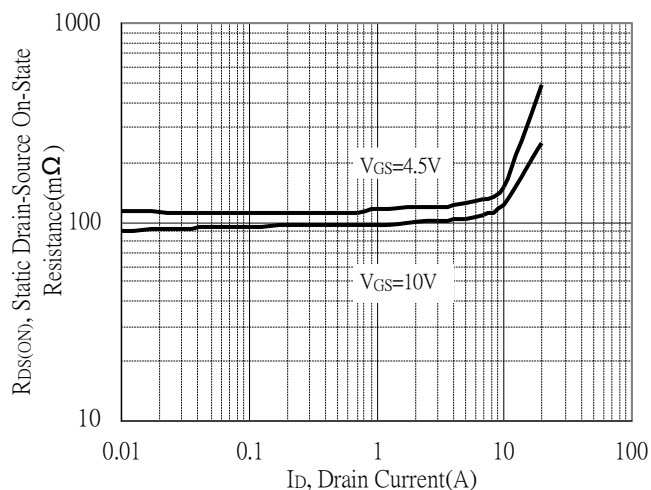
Typical Output Characteristics



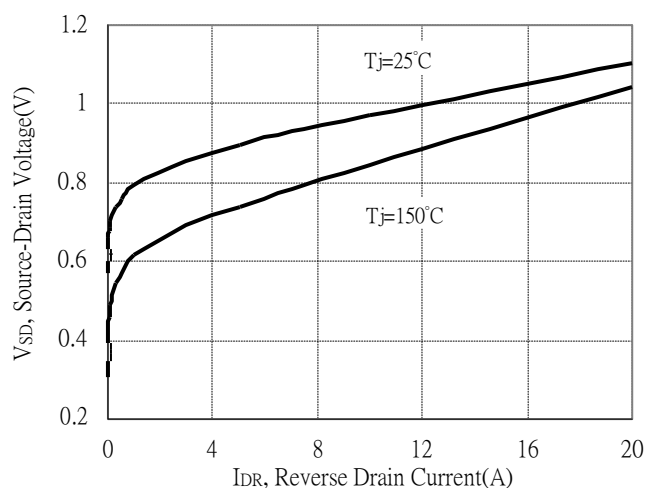
Breakdown Voltage vs Ambient Temperature



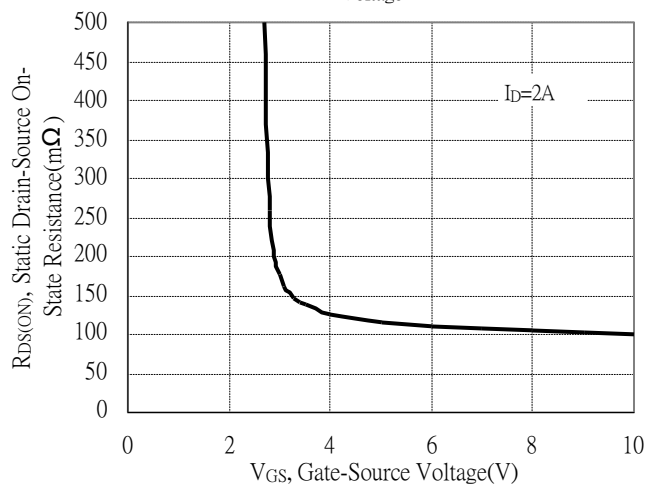
Static Drain-Source On-State resistance vs Drain Current



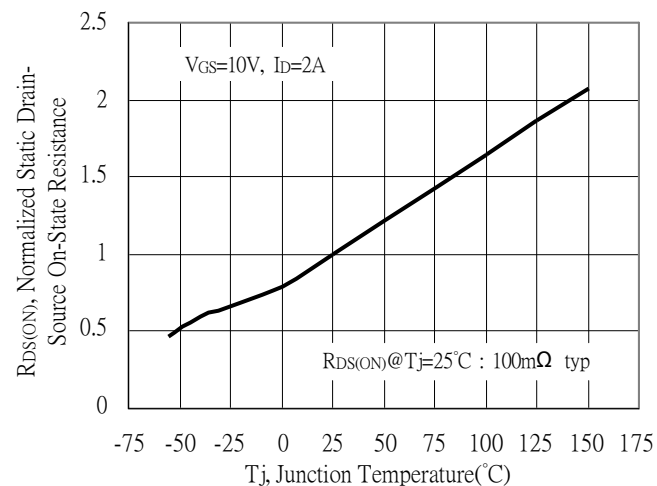
Reverse Drain Current vs Source-Drain Voltage



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

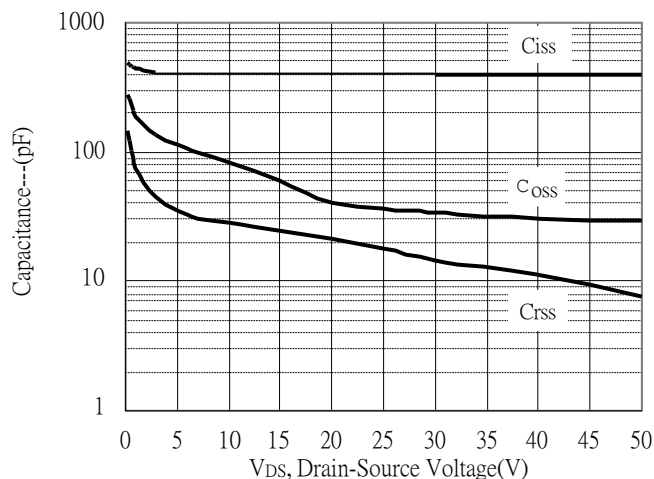


Drain-Source On-State Resistance vs Junction Temperature

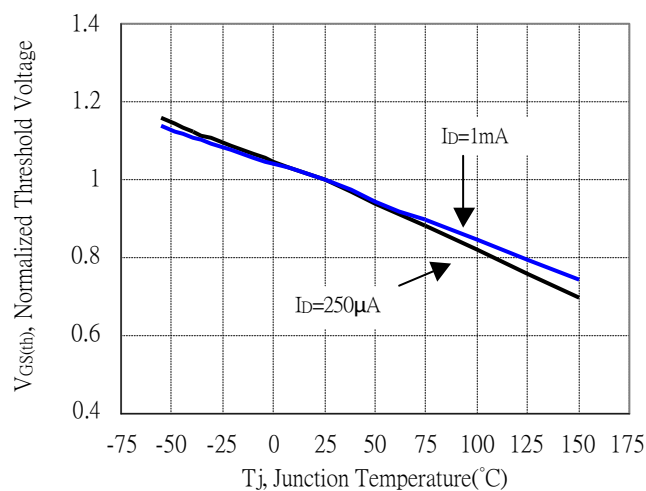


Typical Characteristics(Cont.)

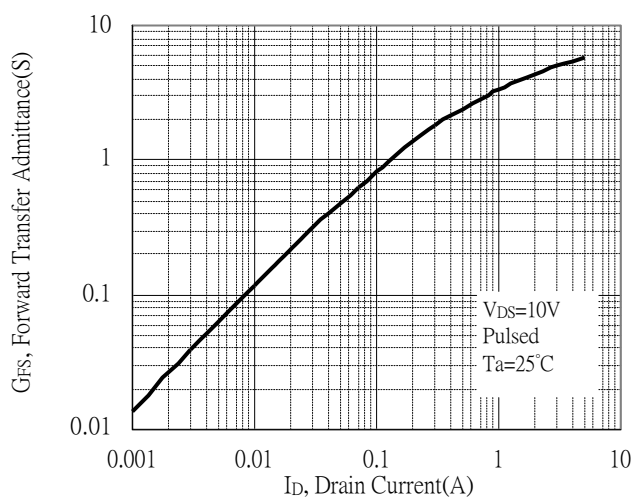
Capacitance vs Drain-to-Source Voltage



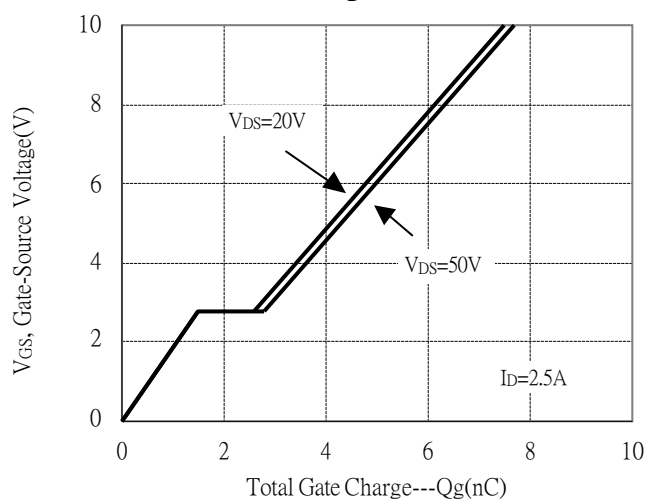
Normalized Threshold Voltage vs Junction Temperature



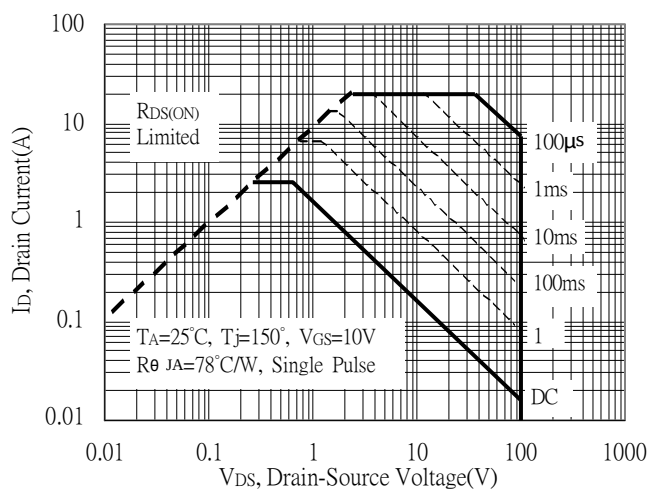
Forward Transfer Admittance vs Drain Current



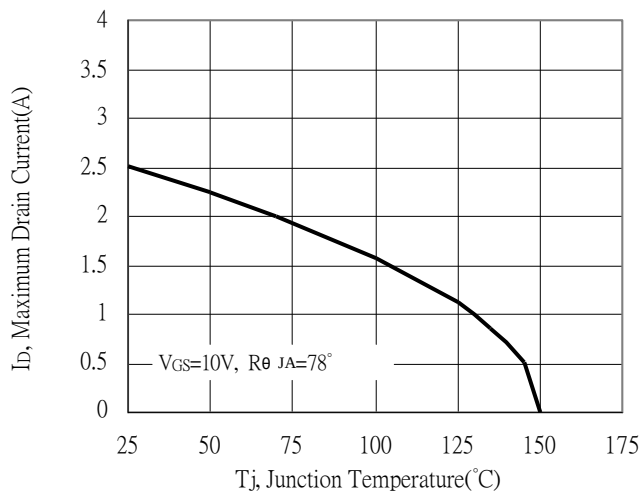
Gate Charge Characteristics



Maximum Safe Operating Area

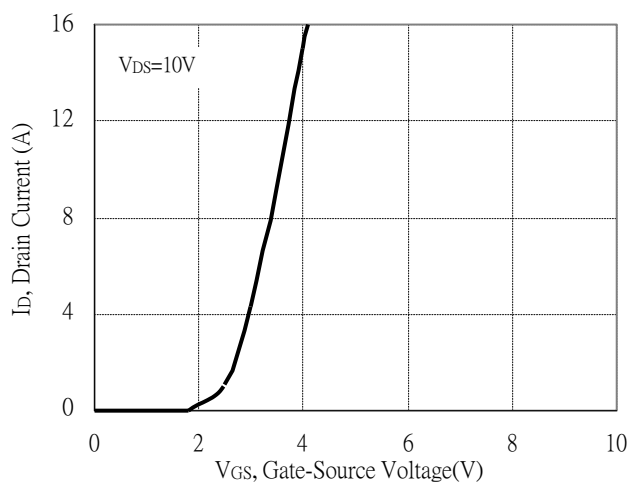


Maximum Drain Current vs Junction Temperature

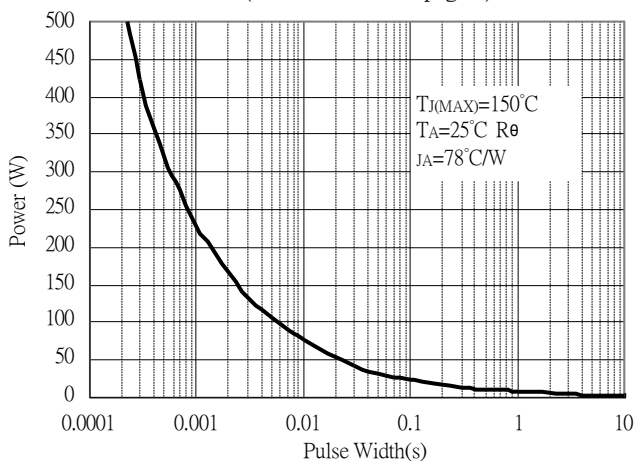


Typical Characteristics(Cont.)

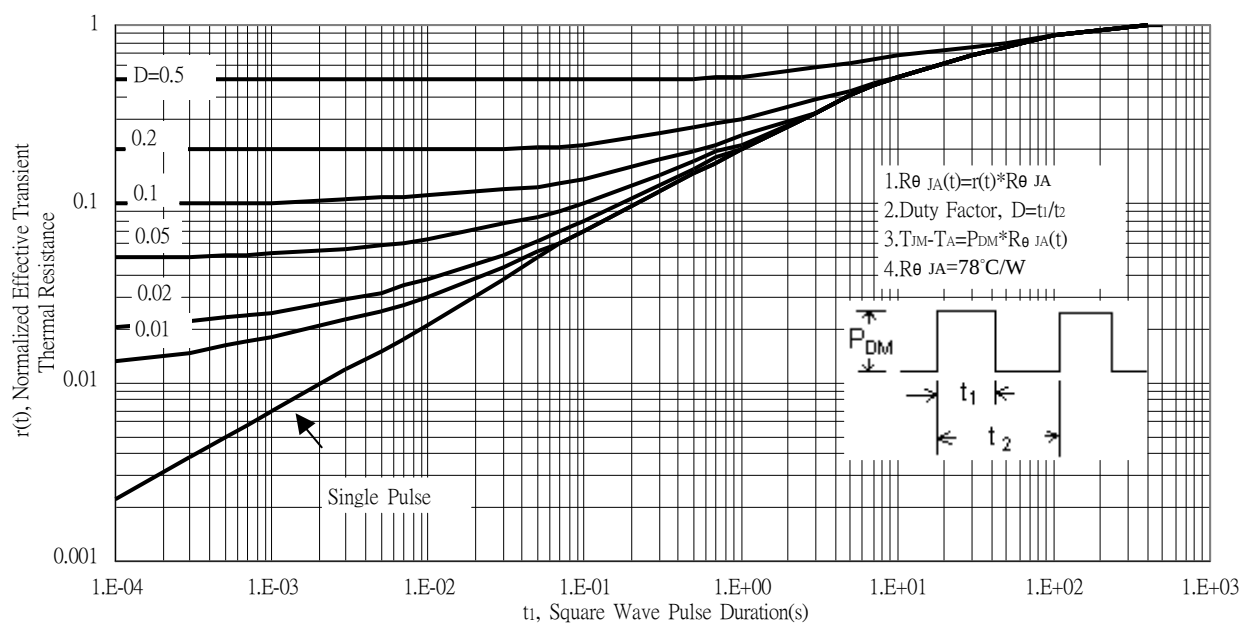
Typical Transfer Characteristics



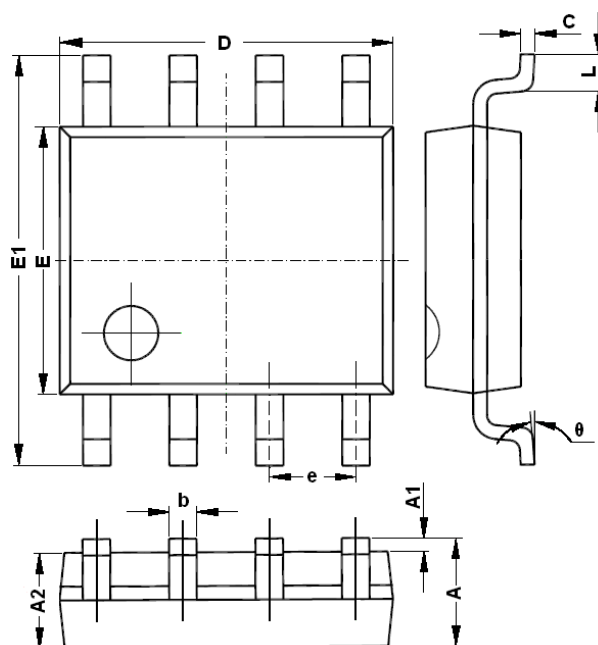
Single Pulse Maximum Power Dissipation
 (Please see Note on page 2)



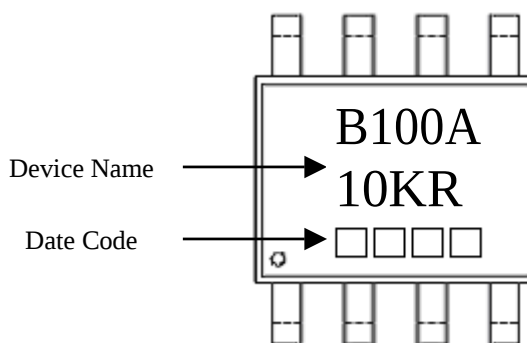
Transient Thermal Response Curves



SOP-8 Dimension



Marking:



8-Lead SOP-8 Plastic Package
 Code: Q8

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069	E	3.800	4.000	0.150	0.157
A1	0.100	0.250	0.004	0.010	E1	5.800	6.200	0.228	0.244
A2	1.350	1.550	0.053	0.061	e	1.270	(BSC)	0.050	(BSC)
b	0.330	0.510	0.013	0.020	L	0.400	1.270	0.016	0.050
c	0.170	0.250	0.006	0.010	θ	0	8°	0	8°
D	4.700	5.100	0.185	0.200					