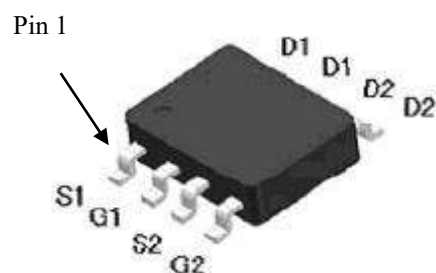


Dual N-Channel Enhancement Mode Power MOSFET

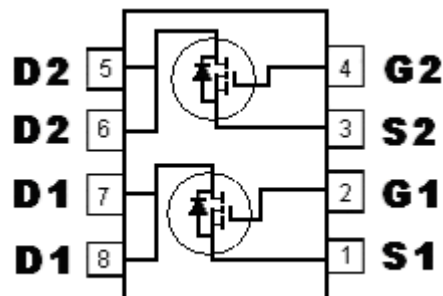
Features:

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

SOP-8



BV_{DSS}	60V
I_D@V_{GS}=10V, T_A=25°C	7A
R_{DS(on)}@V_{GS}=10V, I_D=5A	37mΩ(typ)
R_{DS(on)}@V_{GS}=5V, I_D=4A	42mΩ(typ)



G : Gate S : Source D : Drain

Ordering Information

Device	Package	Shipping
KSCB60A06	SOP-8 (Pb-free lead plating and halogen-free package)	4000 pcs / tape & reel

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	
Continuous Drain Current @ V _{GS} =10V, T _C =25°C	I _D	7	A
Continuous Drain Current @ V _{GS} =10V, T _C =100°C		4.4	
Continuous Drain Current @ V _{GS} =10V, T _A =25°C		4.3 (Note 2)	
Continuous Drain Current @ V _{GS} =10V, T _A =100°C		2.7 (Note 2)	
Pulsed Drain Current	I _{DM}	20 (Note 1)	
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 _{th,j-c}	30	°C/W
Thermal Resistance, Junction-to-ambient, max	R _{th,j-a}	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.

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

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	60	-	-	V	V _{GS} =0, I _D =250μA
V _{GS(th)}	1.0	1.7	3.0	V	V _{DS} =V _{GS} , I _D =250μA
G _{FS} *1	-	11	-	S	V _{DS} =5V, I _D =5A
I _{GSS}	-	-	±100	nA	V _{GS} =±20, V _{DS} =0
I _{DSS}	-	-	1	μA	V _{DS} =48V, V _{GS} =0
	-	-	25	μA	V _{DS} =40V, V _{GS} =0, T _j =125°C
R _{DS(ON)} *1	-	37	50	mΩ	V _{GS} =10V, I _D =5A
	-	42	60	mΩ	V _{GS} =5V, I _D =4A
Dynamic					
Q _g *1, 2	-	14	-	nC	V _{DS} =30V, I _D =7A, V _{GS} =10V
Q _{gs} *1, 2	-	4	-		
Q _{gd} *1, 2	-	4.9	-		
t _{d(ON)} *1, 2	-	12	-	ns	V _{DS} =30V, I _D =1A, V _{GS} =10V, R _G =6Ω
t _r *1, 2	-	6	-		
t _{d(OFF)} *1, 2	-	34	-		
t _f *1, 2	-	12	-		

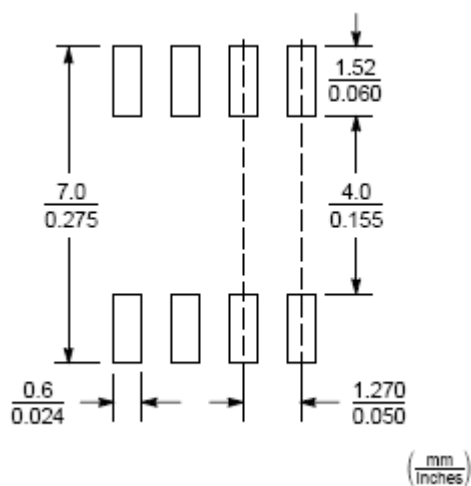
Ciss	-	1160	-	pF	VGS=0V, VDS=30V, f=1MHz
Coss	-	44	-		
Crss	-	33	-		
Source-Drain Diode					
IS *1	-	-	2.3	A	
ISM *3	-	-	9.2		
VSD *1	-	0.76	1.2	V	IF=IS, VGS=0V

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

*2.Independent of operating temperature

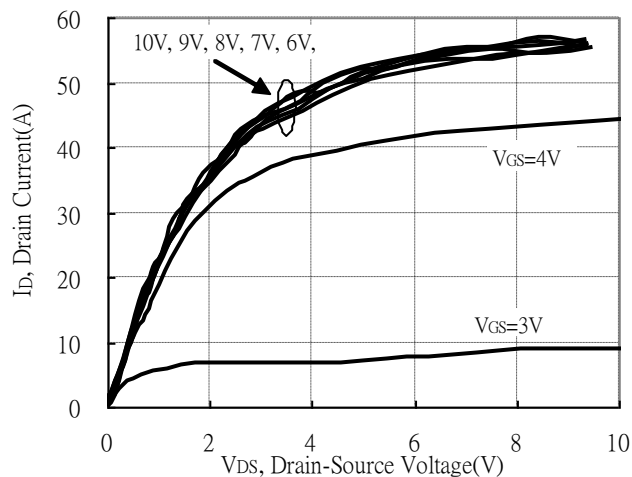
*3.Pulse width limited by maximum junction temperature.

Recommended Soldering Footprint

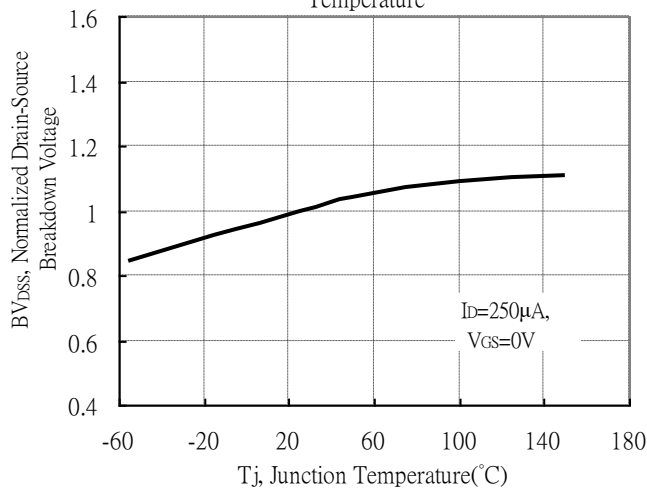


Typical Characteristics

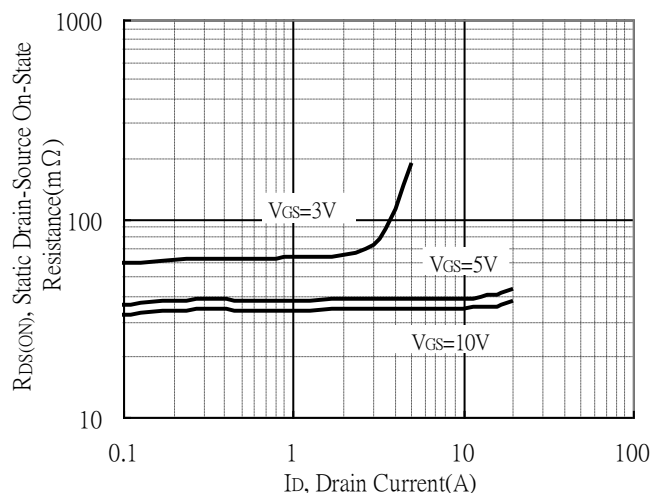
Typical Output Characteristics



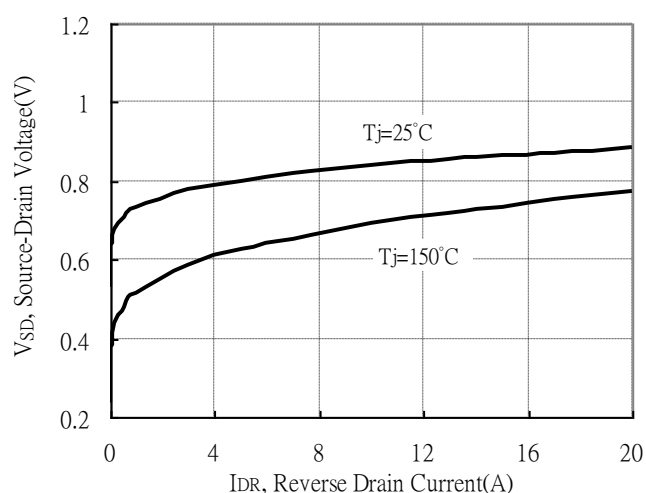
Normalized Brekdown Voltage vs Ambient Temperature



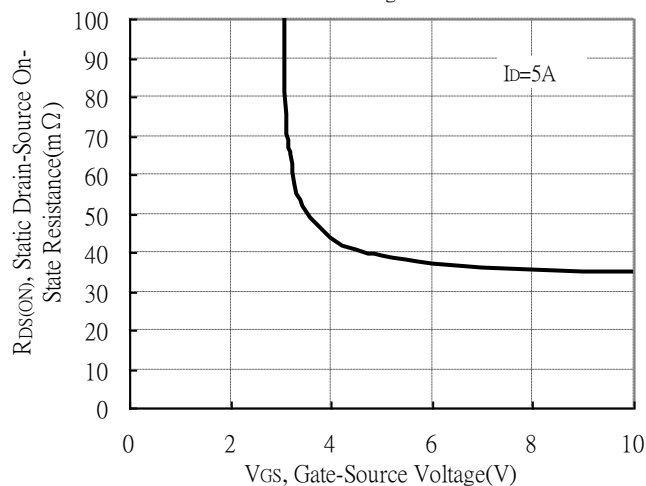
Static Drain-Source On-State resistance vs Drain Current



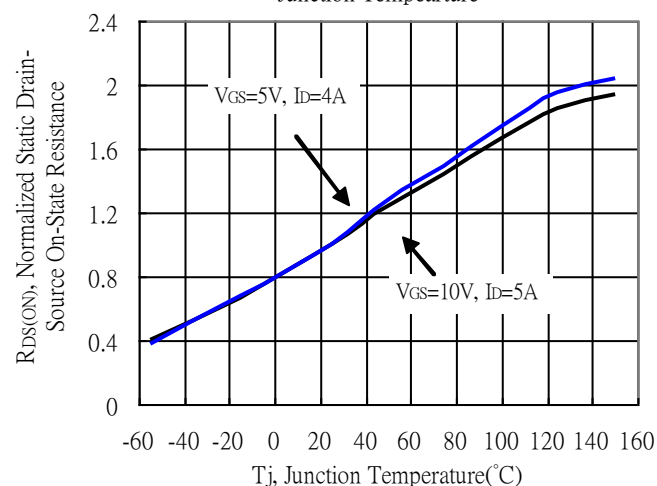
Reverse Drain Current vs Source-Drain Voltage



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

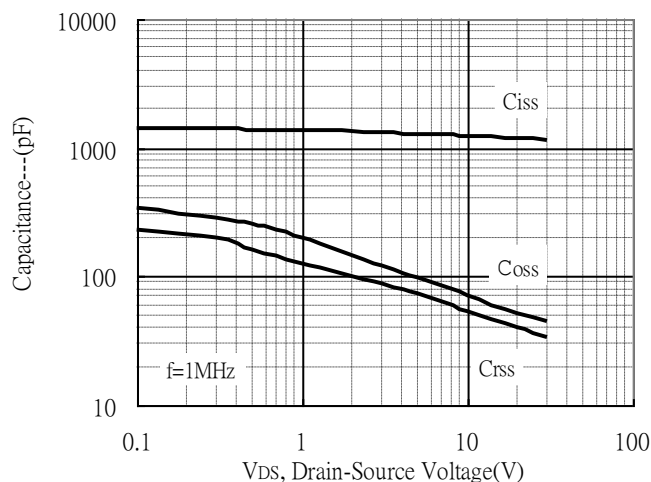


Normalized Drain-Source On-State Resistance vs Junction Temperature

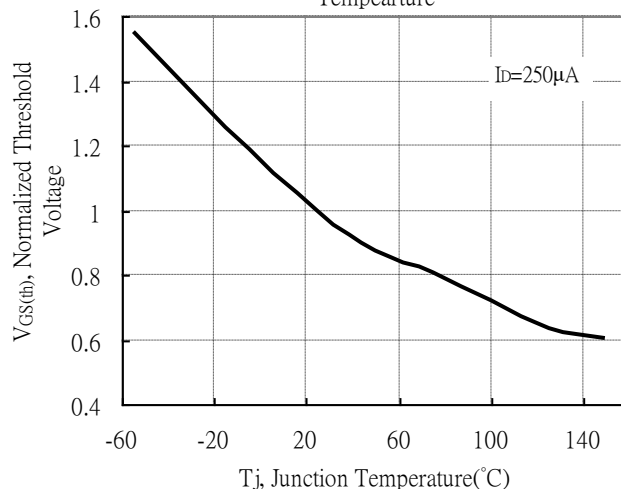


Typical Characteristics(Cont.)

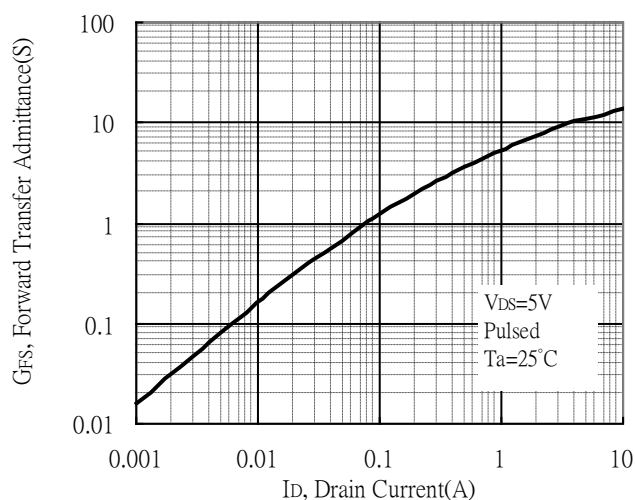
Capacitance vs Drain-to-Source Voltage



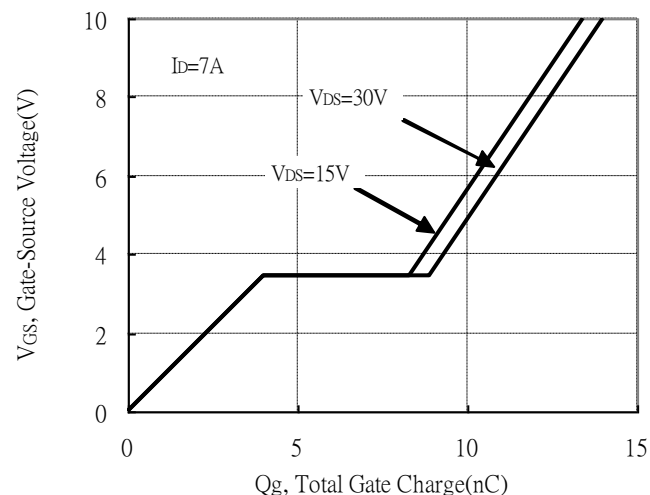
Normalized Threshold Voltage vs Junction Temperature



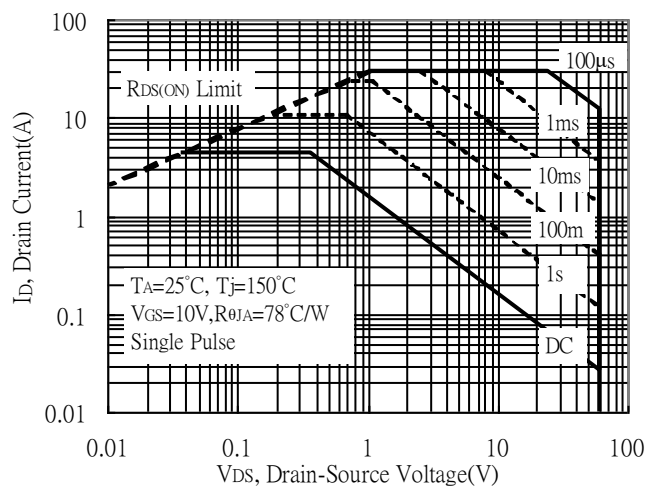
Forward Transfer Admittance vs Drain Current



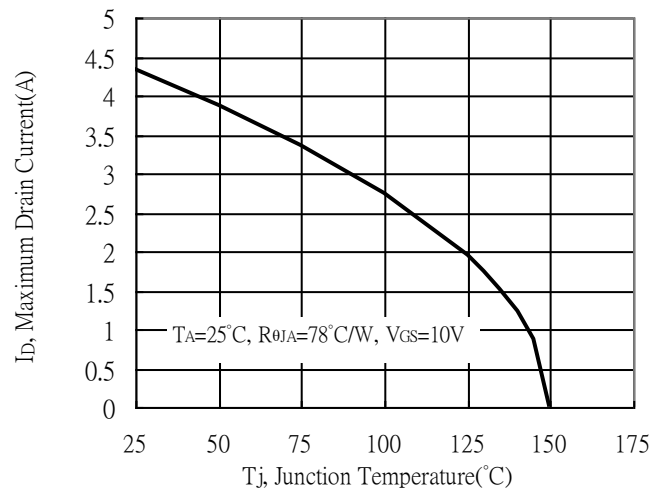
Gate Charge Characteristics



Maximum Safe Operating Area

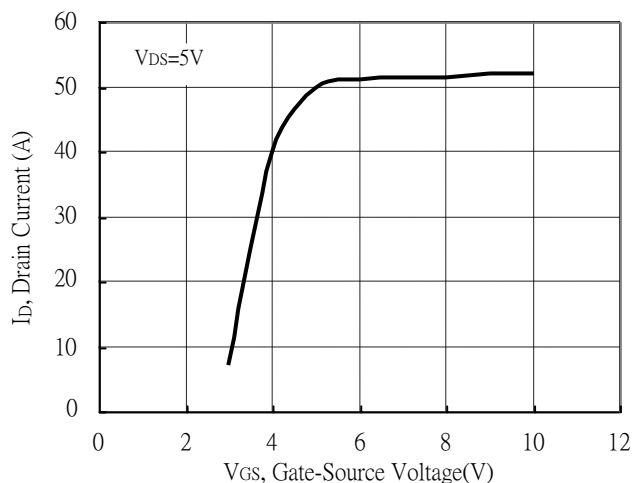


Maximum Drain Current vs Junction Temperature

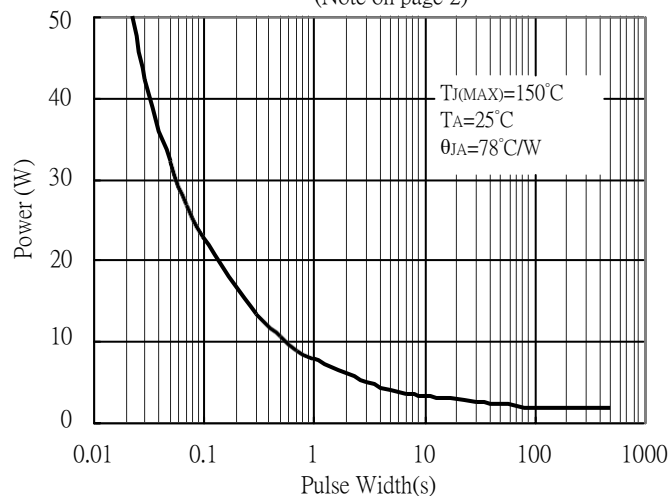


Typical Characteristics(Cont.)

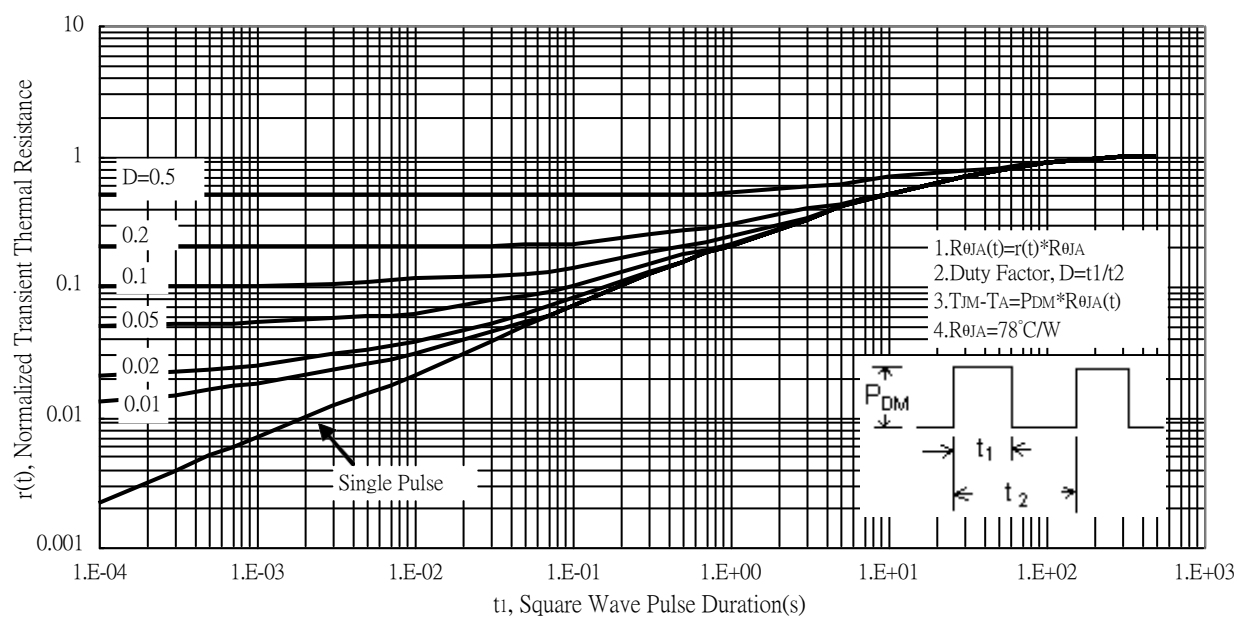
Typical Transfer Characteristics



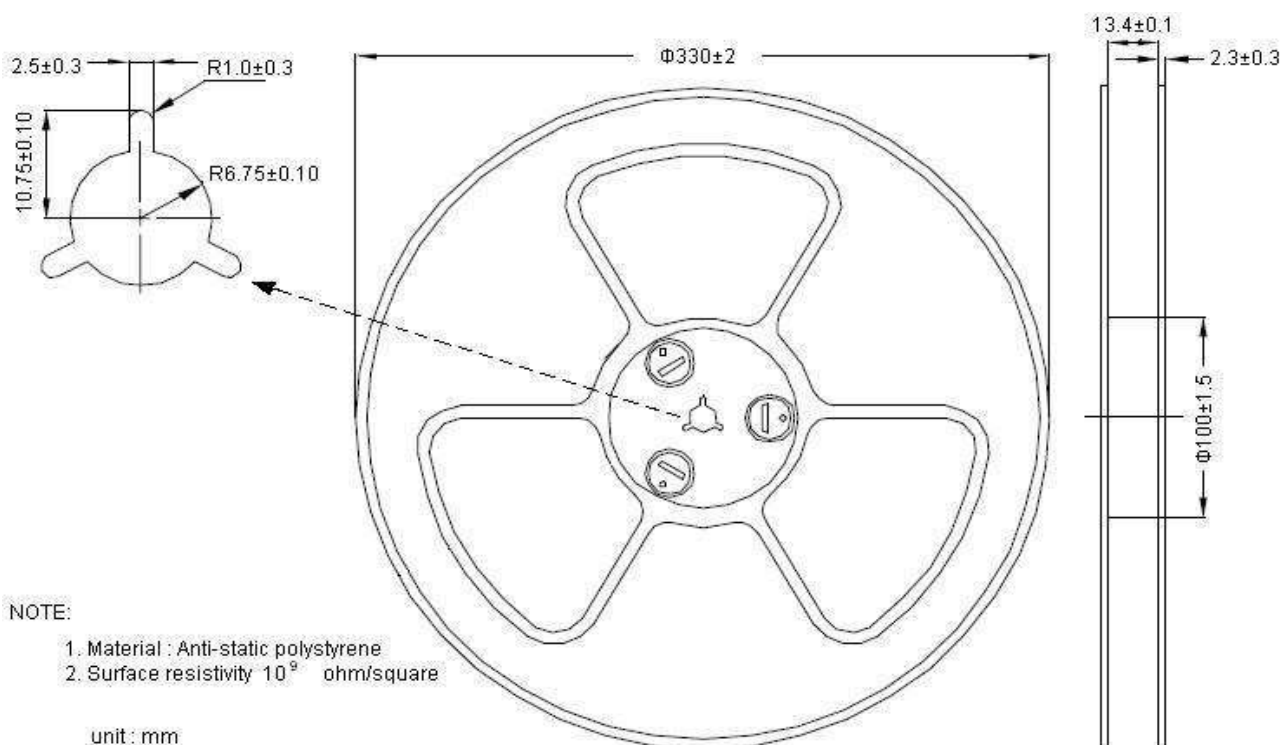
Single Pulse Power Rating, Junction to Ambient
 (Note on page 2)



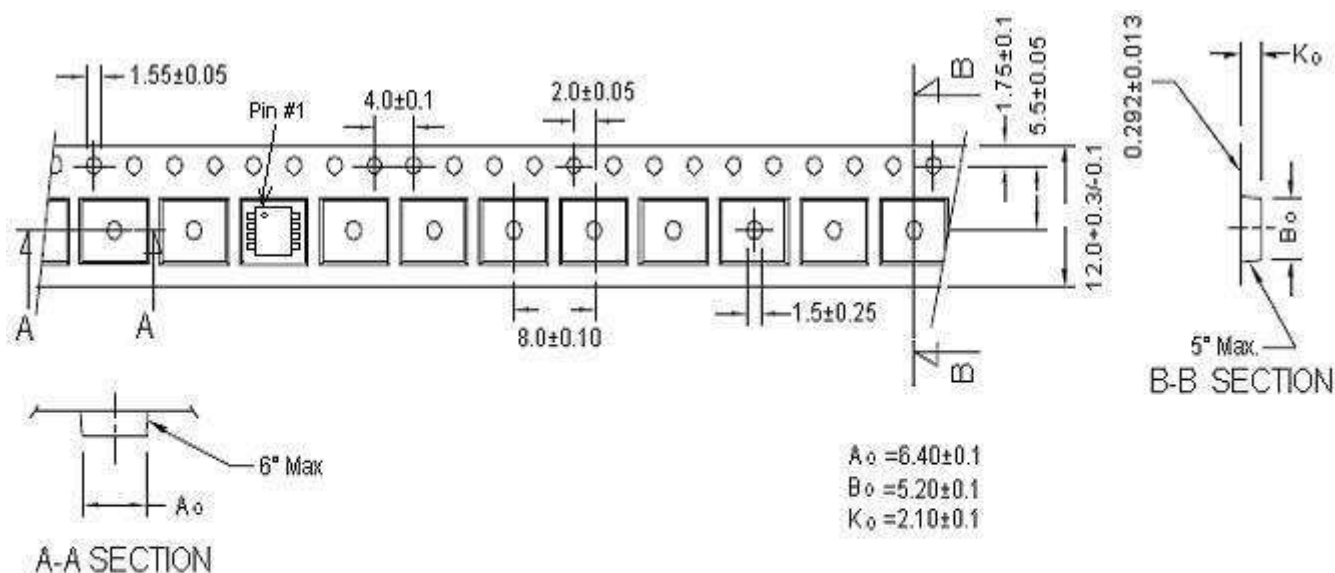
Transient Thermal Response Curves



Reel Dimension



Carrier Tape Dimension

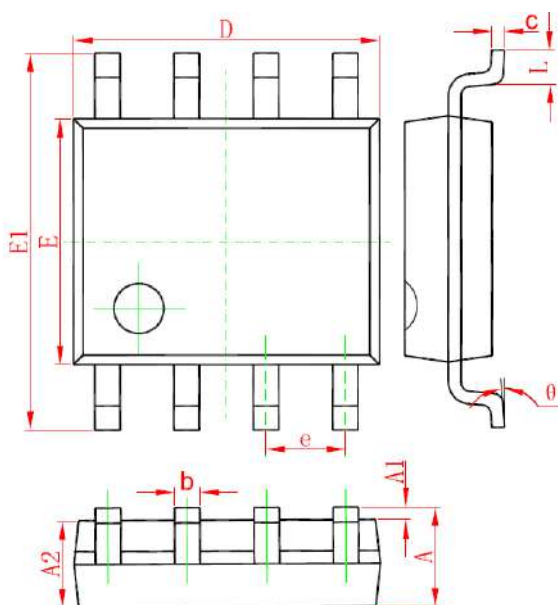


Notes:

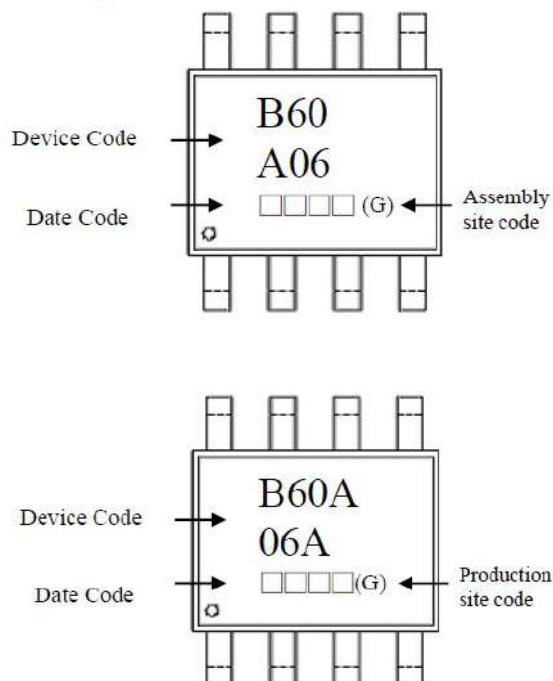
1. 10 sprocket hole pitch cumulative tolerance ± 0.2 .
2. Camber not to exceed 1mm in 100mm.
3. Material: conductive black polystyrene
4. A_0 & B_0 measured on a plane 0.3mm above the bottom of the pocket.
5. K_0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

SOP-8 Dimension



Marking:



Date Code(counting from left to right) :

1st code: year code, the last digit of Christian year

2nd code : month code, Jan→A, Feb→B, Mar→C, Apr→D

May→E, Jun→F, Jul→G, Aug→H, Sep→J,

Oct→K, Nov→L, Dec→M

3rd and 4th codes : production serial number, 01~99

Assembly site code : blank→ JCET, G →GEM

8-Lead SOP-8 Plastic Package

*: Typical

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		*0.050	
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					