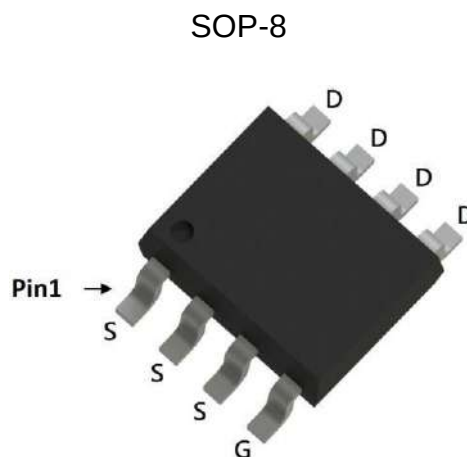


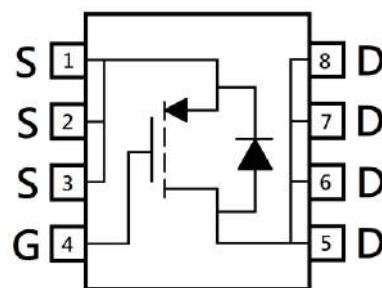
P-CHANNEL ENHANCEMENT MODE POWER MOSFET

Features:

- Simple drive requirement
- Low on-resistance
- Fast switching speed
- Pb-free lead plating and halogen-free package



BV_{DSS}	-60V
$I_D @ T_A=25^{\circ}C, V_{GS}=-10V$	-6.2A
$R_{DS(on)}@V_{GS}=-10V, I_D=-6.2A$	41.7m Ω (typ)
$R_{DS(on)}@V_{GS}=-4.5V, I_D=-5A$	48.3m Ω (typ)



G : Gate S : Source D : Drain

Ordering Information

Device	Package	Shipping
KSCB40P06	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 Breakdown Voltage	BV _{DSS}	-60	V
Gate-Source Voltage	V _{GS}	±20	
Continuous Drain Current (Note 1)	TA=25°C, V _{GS} =-10V	-6.2	A
	TA=70°C, V _{GS} =-10V	-5	
Pulsed Drain Current (Note 2)	IDM	-40	
Single Pulse Avalanche Current @ L=0.1mH	I _{AS}	-13	
Single Pulse Avalanche Energy @ L=1mH	E _{AS}	49	mJ
Total Power Dissipation (Note 1)	TA=25°C	3.1	W
	TA=70°C	2	
Operating Junction and Storage Temperature Range	Tj ; Tstg	-55~+150	°C

Note : 1.Surface mounted on FR-4 board, t≤10sec. The value in any given application depends on the user's specific board design.

2.Pulse width ≤300μs, Duty Cycle≤2%

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	RθJC	25	°C/W
Thermal Resistance, Junction-to-ambient, max	RθJA	40 (Note)	

Note : Surface mounted on 1 in² copper pad of FR-4 board, pulse width≤10s.

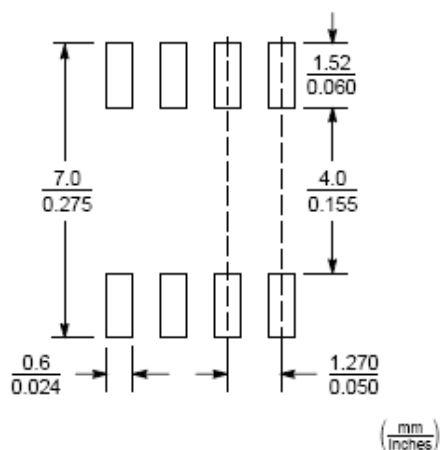
Electrical Characteristics (Tj=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	-60	-	-	V	V _{GS} =0V, I _D =-250μA
V _{GS(th)}	-1	-	-2.5		V _{DS} =V _{GS} , I _D =-250μA
I _{GSS}	-	-	±100	nA	V _{GS} =±20V, V _{DS} =0V
I _{DSS}	-	-	-1	μA	V _{DS} =-48V, V _{GS} =0V
*R _{DS(ON)}	-	41.7	54.5	mΩ	I _D =-6.2A, V _{GS} =-10V
	-	48.3	65		I _D =-5A, V _{GS} =-4.5V
*G _{FS}	-	15.3	-	S	V _{DS} =-5V, I _D =-6.2A
Dynamic					
C _{iss}	-	2094	-	pF	V _{DS} =-30V, V _{GS} =0V, f=1MHz
C _{oss}	-	90	-		
C _{rss}	-	68	-		
*t _{d(ON)}	-	11.4	-	ns	V _{DD} =-30V, I _D =-6.2A, V _{GS} =-10V, R _G =3Ω
*t _r	-	17.8	-		
*t _{d(OFF)}	-	63.4	-		
*t _f	-	9.2	-		

*Qg	-	38	-	nC	V _{DS} =-30V, V _{GS} =-10V, I _D =-6.2A
*Qgs	-	8.6	-		
*Qgd	-	4	-		
Rg	-	8.6	-	Ω	f=1MHz
Source Drain Diode					
*I _S	-	-	-4.2	A	V _{GS} =0V, I _S =-1A
*I _{SM}	-	-	-16		
*V _{SD}	-	-0.79	-1	V	I _F =6.2A, dI _F /dt=100A/μs
*t _{rr}	-	15.2	-	ns	
*Q _{rr}	-	12.4	-	nC	

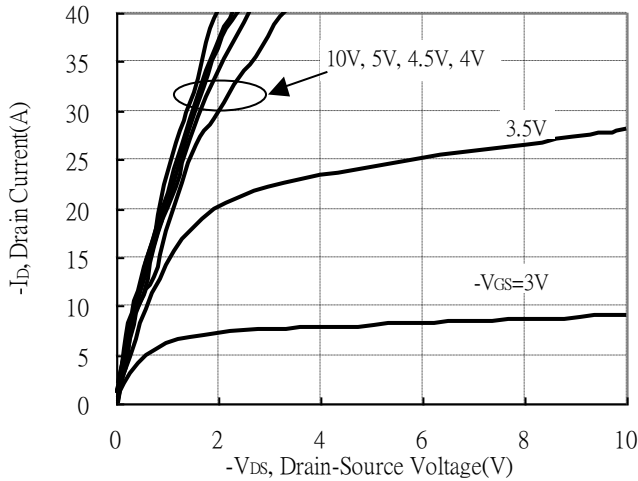
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Recommended Soldering Footprint

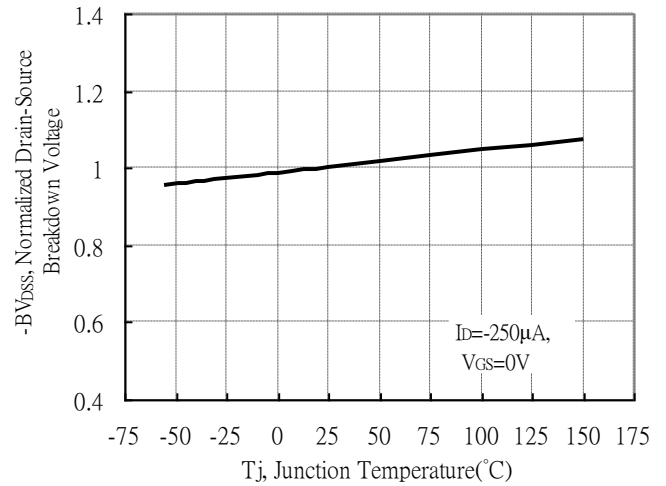


Typical Characteristics

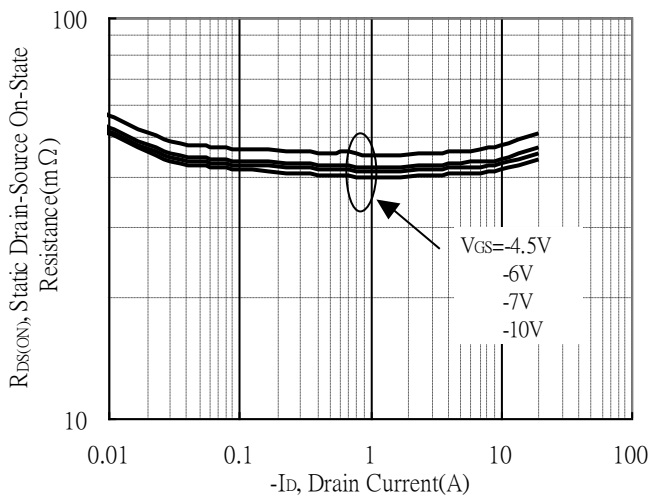
Typical Output Characteristics



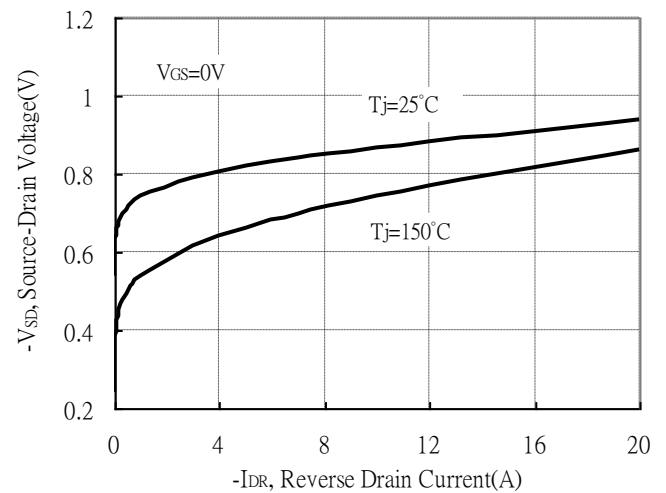
Breakdown Voltage vs Temperature



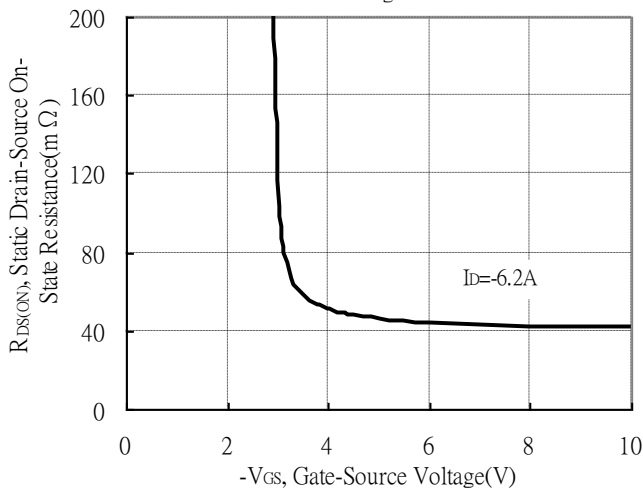
Static Drain-Source On-State resistance vs Drain Current



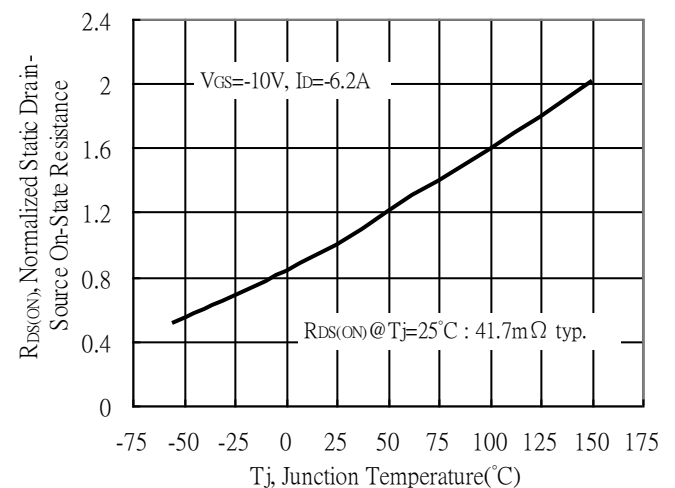
Reverse Drain Current vs Source-Drain Voltage



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

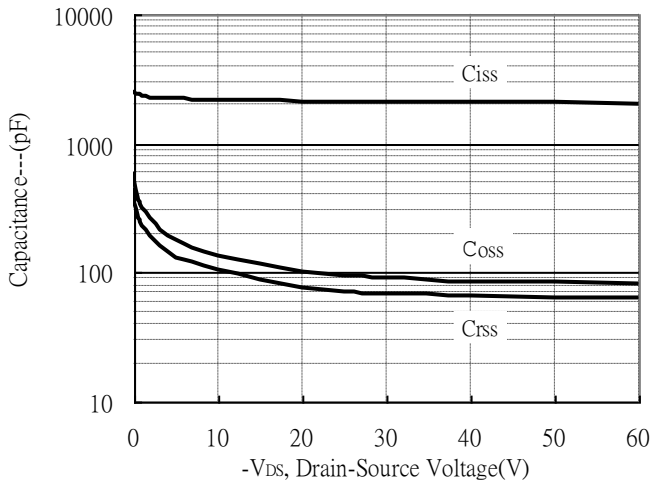


Drain-Source On-State Resistance vs Junction Temperature

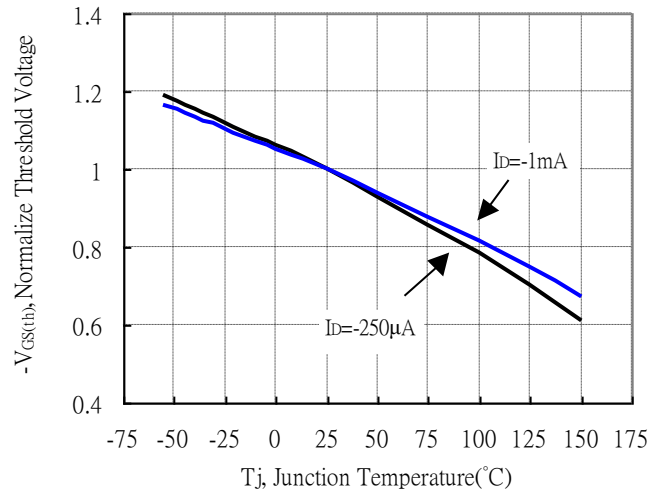


Typical Characteristics(Cont.)

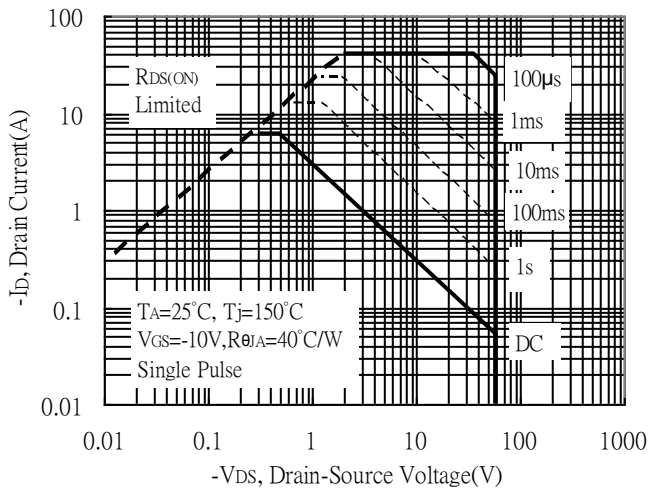
Capacitance vs Drain-to-Source Voltage



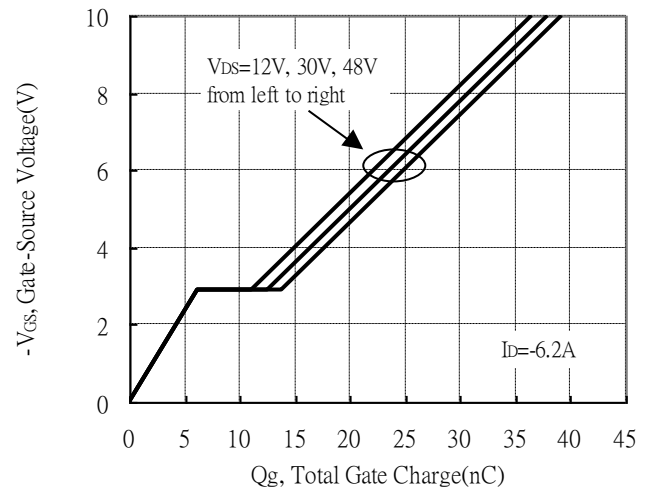
Threshold Voltage vs Junction Temperature



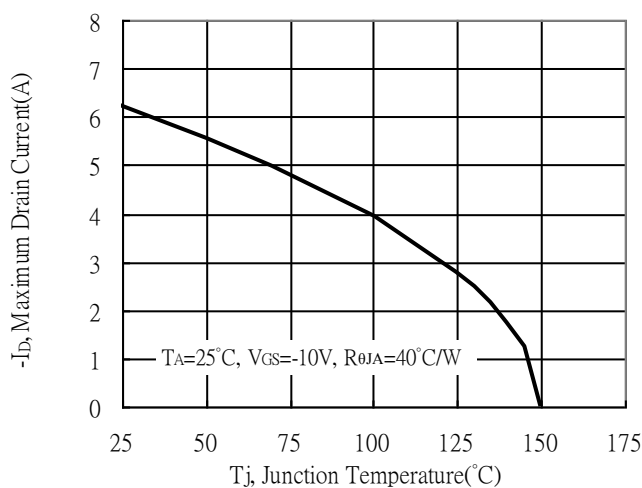
Maximum Safe Operating Area



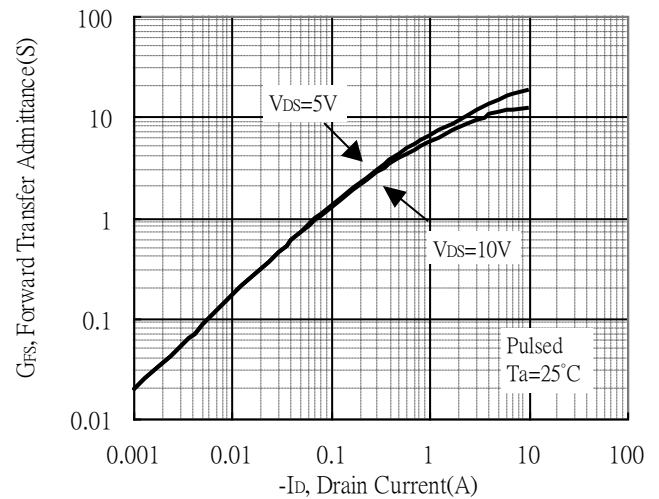
Gate Charge Characteristics



Maximum Drain Current vs Junction Temperature

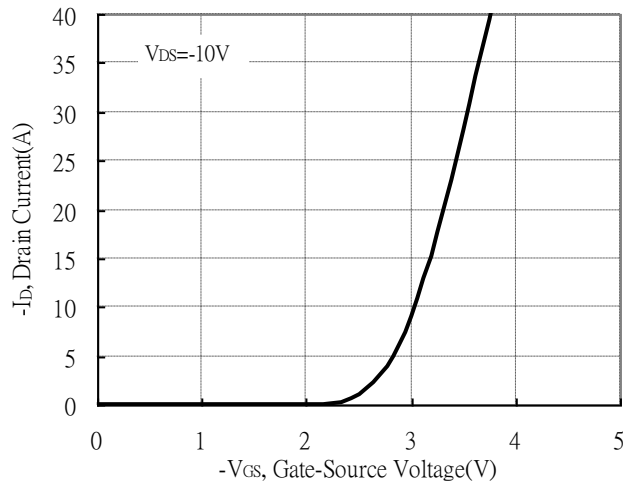


Forward Transfer Admittance vs Drain Current

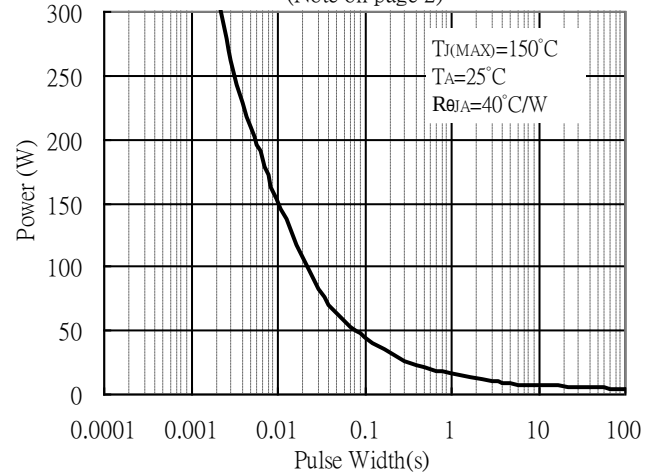


Typical Characteristics(Cont.)

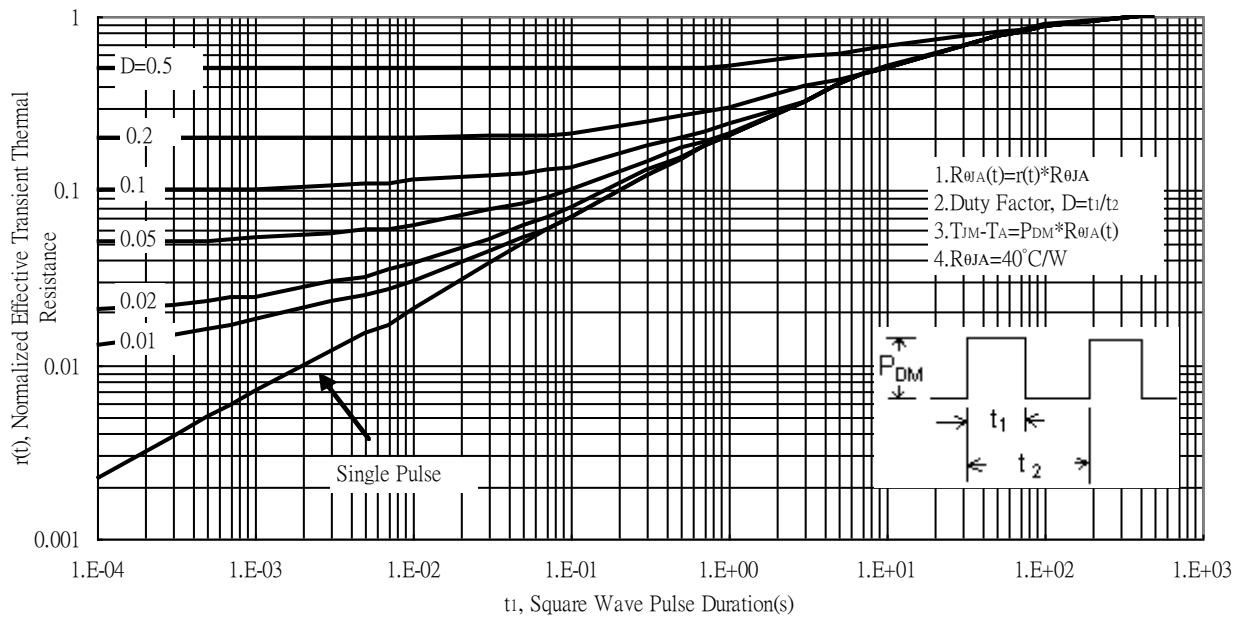
Typical Transfer Characteristics



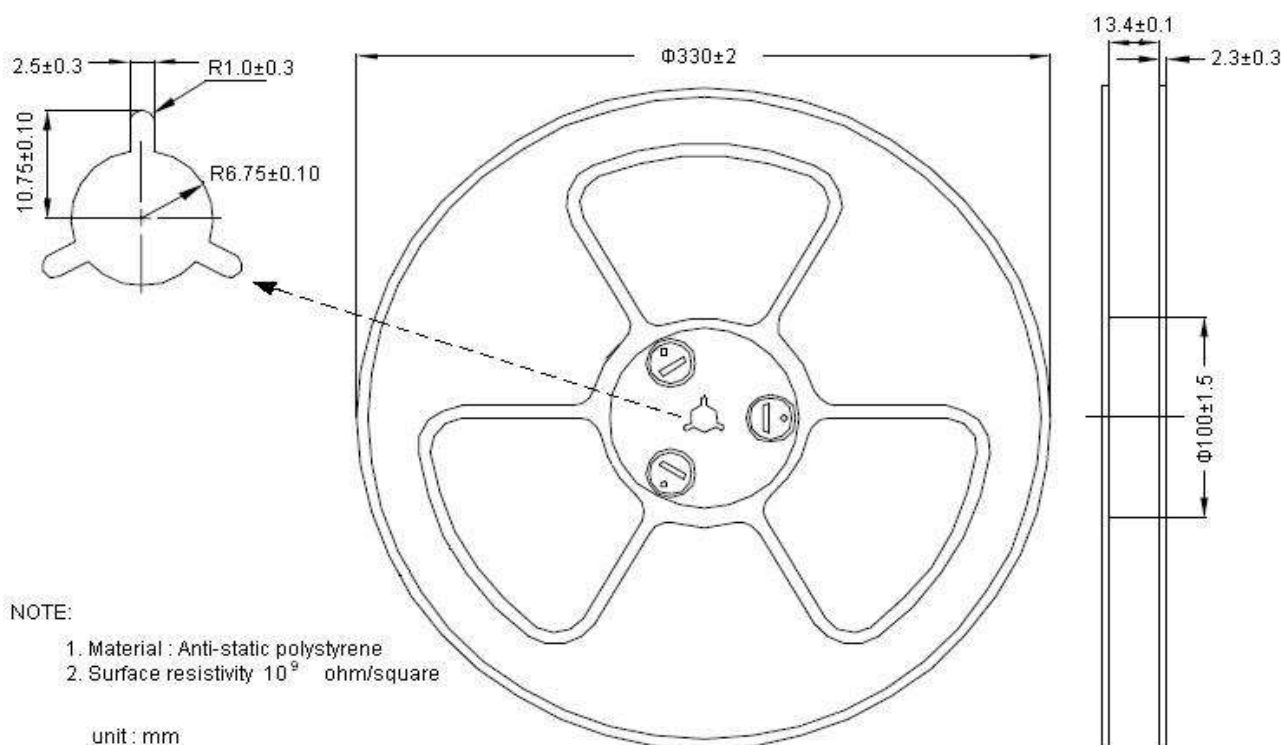
Single Pulse Power Rating, Junction to Ambient
 (Note on page 2)



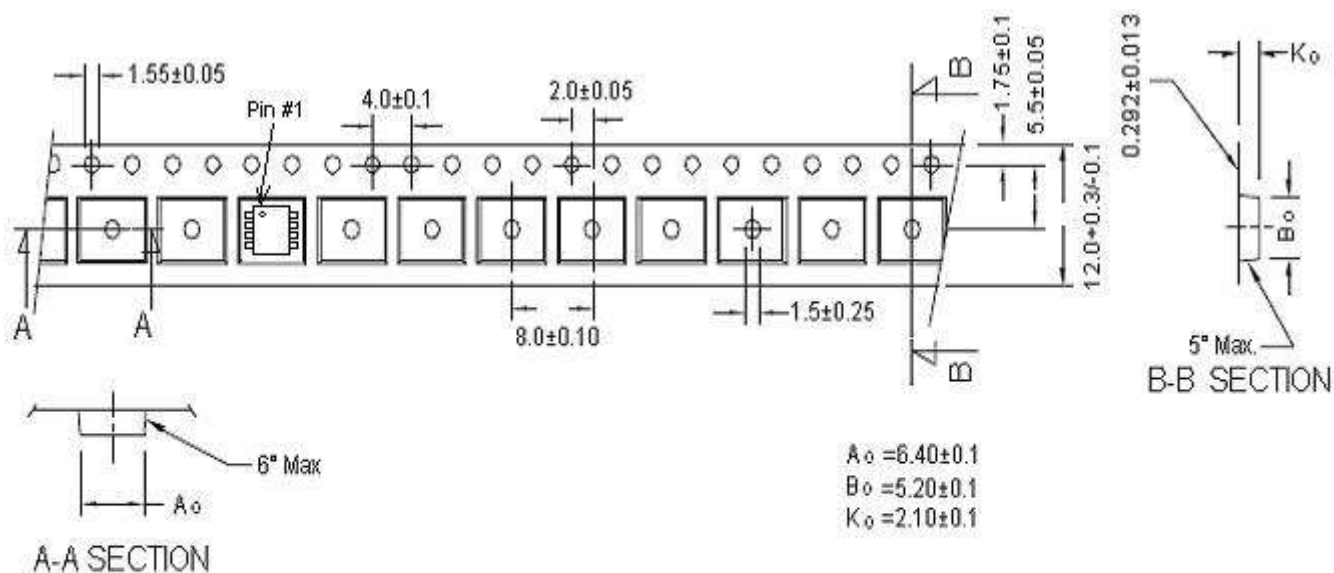
Transient Thermal Response Curves



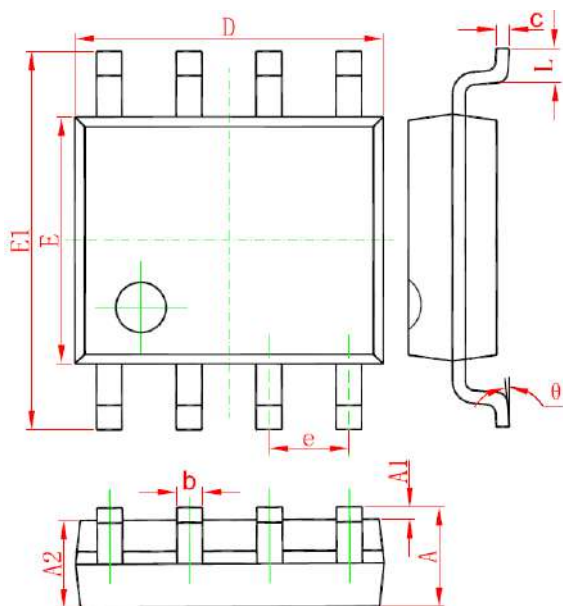
Reel Dimension



Carrier Tape Dimension

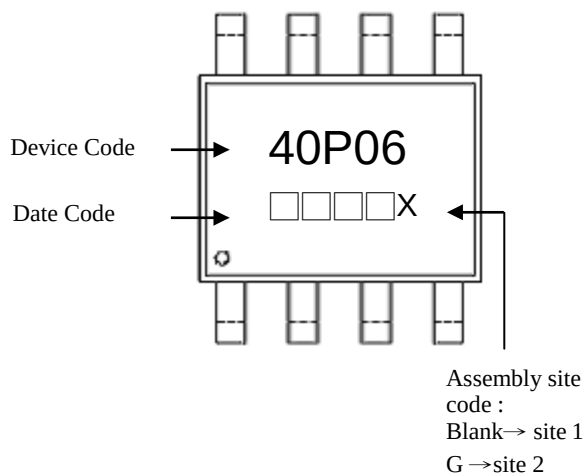


SOP-8 Dimension



8-Lead SOP-8 Plastic Package

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

*: 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					