General Description

- Low $R_{DS(ON)}$
- RoHS and Halogen-Free Compliant

Applications

- Load switch
- PWM

General Features

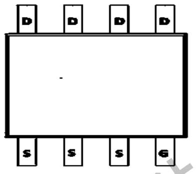
V_{DS} = 100V I_D = 8A

$R_{DS(ON)}$ =61 mΩ(typ.) @ V_{GS} = 10V

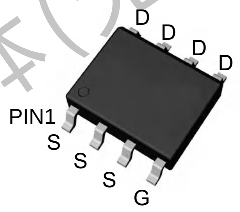
100% UIS Tested
100% R_g Tested

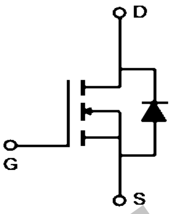
Green Product

S:SOP-8L



PIN1





Marking: G08N10

Absolute Maximum Ratings (T_A= 25°C Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_A=25˚C	Continuous Drain Current, V_{GS} @ 10V[1]	8	A
I_D@T_A=100˚C	Continuous Drain Current, V_{GS} @ 10V[1]	4	A
I_{DM}	Pulsed Drain Current[2]	56	A
EAS	Single Pulse Avalanche Energy[3]	22	mJ
P_D@T_A=25˚C	Total Power Dissipation[4]	46	W
T_{STG}	Storage Temperature Range	-55 to 175	˚C
T_J	Operating Junction Temperature Range	-55 to 175	˚C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient [1]	---	---	˚C/W
$R_{\theta JC}$	Thermal Resistance Junction-Case[1]	---	2.7	˚C/W

Electrical Characteristics： (T_A=25℃ unless otherwise noted)

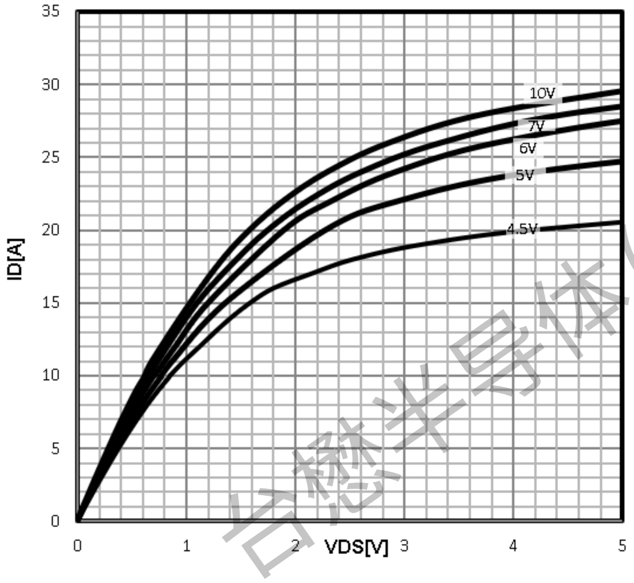
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	100	---	---	V
△BV_{DSS}/△T_J	BV_{DSS} Temperature Coefficient	Reference to 25˚C , I_D=1mA	---	---	---	V/˚C
$R_{DS(ON)}$	Static Drain-Source On-Resistance^2	V_{GS}=10V , I_D=5A	---	61	75	mΩ
		V_{GS}=4.5V , I_D=4A	---	77	100	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1.0	2.0	3.0	V
△$V_{GS(th)}$	$V_{GS(th)}$ Temperature Coefficient		---	---	---	mV/˚C
I_{DSS}	Drain-Source Leakage Current	V_{DS}=100V , V_{GS}=0V , T_J=25˚C	---	---	1	uA
		V_{DS}=100V, V_{GS}=0V , T_J=100˚C	---	---	100	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V , I_D=5A	---	---	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	---	---	Ω
Q_g	Total Gate Charge	V_{DS}=50V , V_{GS}=10V , I_D=10A	---	3.7	---	nC
Q_{gs}	Gate-Source Charge		---	0.8	---	
Q_{gd}	Gate-Drain Charge		---	1	---	
$T_{d(on)}$	Turn-On Delay Time	VGS=10V, VDD=50V, RG=3Ω, ID=10A	---	8	---	ns
T_r	Rise Time		---	16	---	
$T_{d(off)}$	Turn-Off Delay Time		---	17	---	
T_f	Fall Time		---	14	---	
C_{iss}	Input Capacitance	V_{DS}=50V , V_{GS}=0V , f=1MHz	---	228	---	pF
C_{oss}	Output Capacitance		---	58	---	
C_{rss}	Reverse Transfer Capacitance		---	1.9	---	

Diode Characteristics

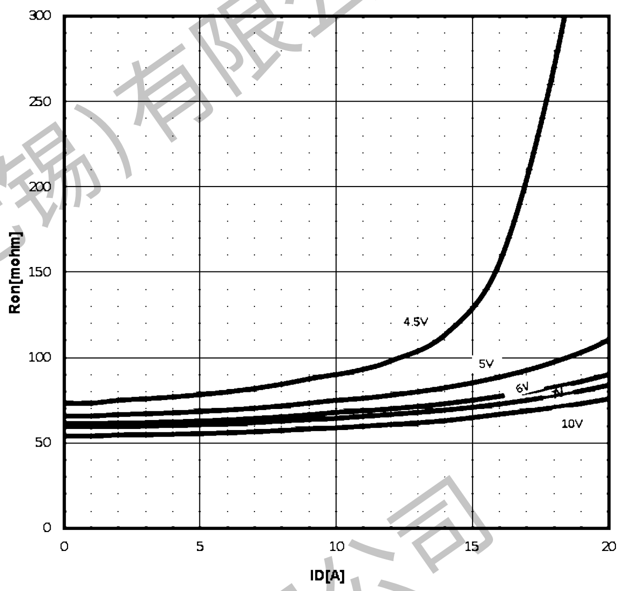
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current^{1,4}	V_G=V_D=0V , Force Current	---	---	8	A
V_{SD}	Diode Forward Voltage^2	V_{GS}=0V , I_S=20A , T_J=25C	---	---	1.2	V
t_{rr}	Reverse Recovery Time	IF=10A , di/dt=100A/μs , T_J=25C	---	22	---	nS
Q_{rr}	Reverse Recovery Charge		---	18	---	nC

Characteristics Curve：

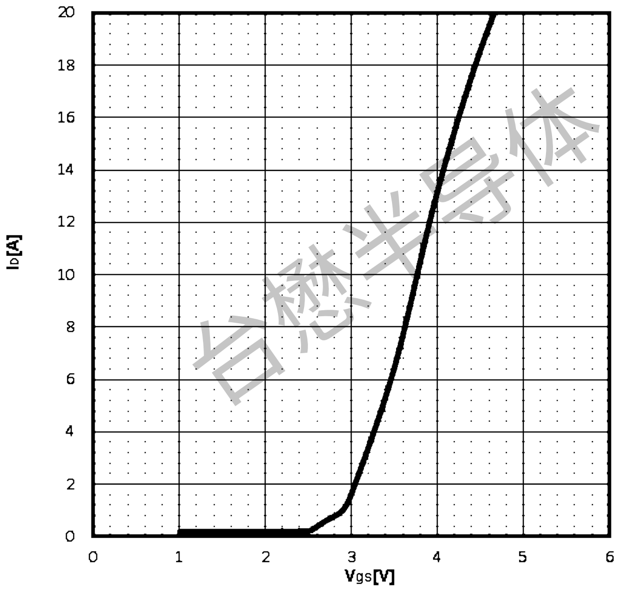
Typ. output characteristics
I_D=f(



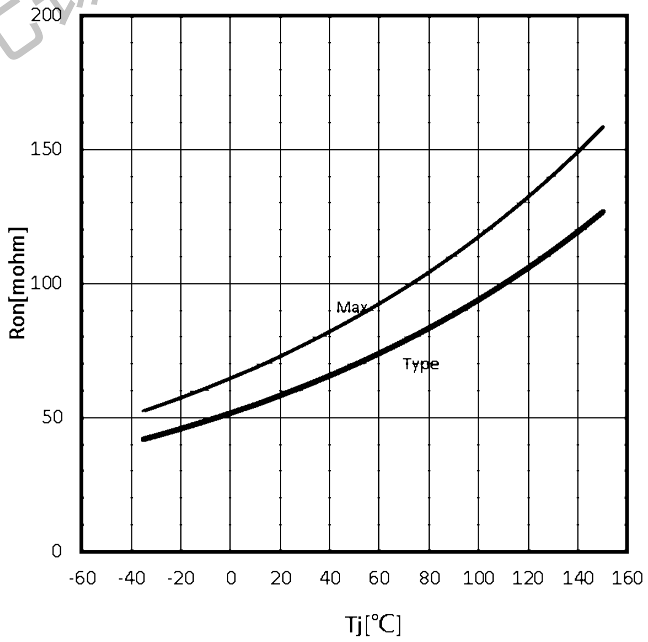
Typ. drain-source on resistance



Typ. transfer characteristics
I_D=f(V_{GS})

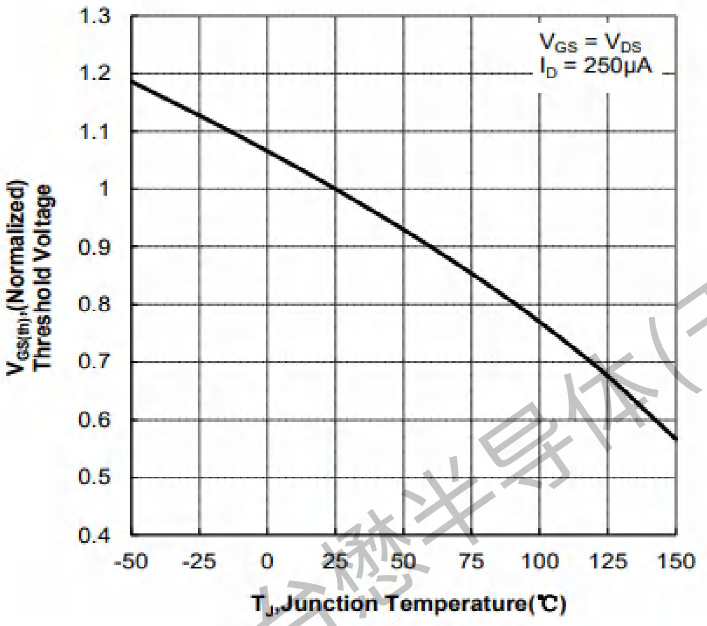


Drain-source on-state resistance
$R_{DS(on)}$=f(T_j);I_D=5A; V_{GS}=10V



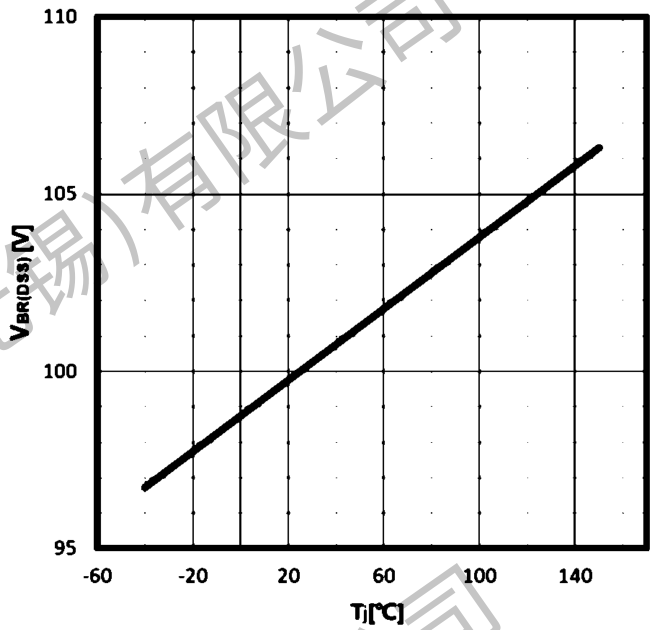
Gate Threshold Voltage

$V_{TH}=f(T_j)$; I_D=250uA



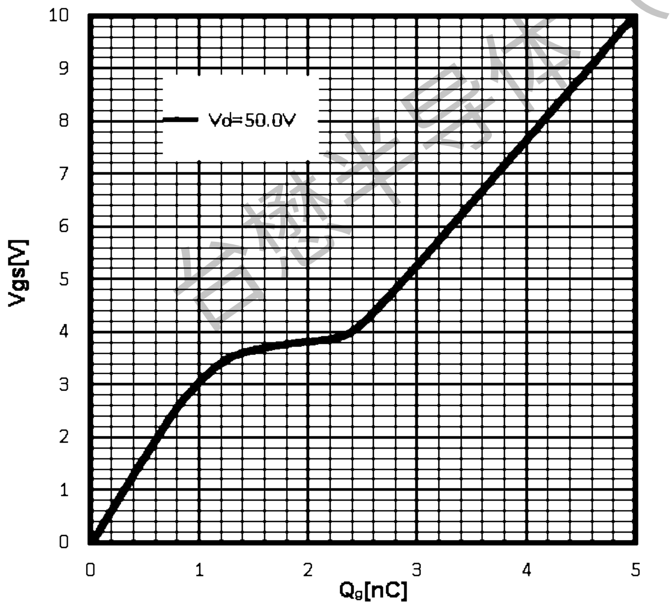
Drain-source breakdown voltage

$V_{BR(DSS)}=f(T_j)$; I_D=250uA



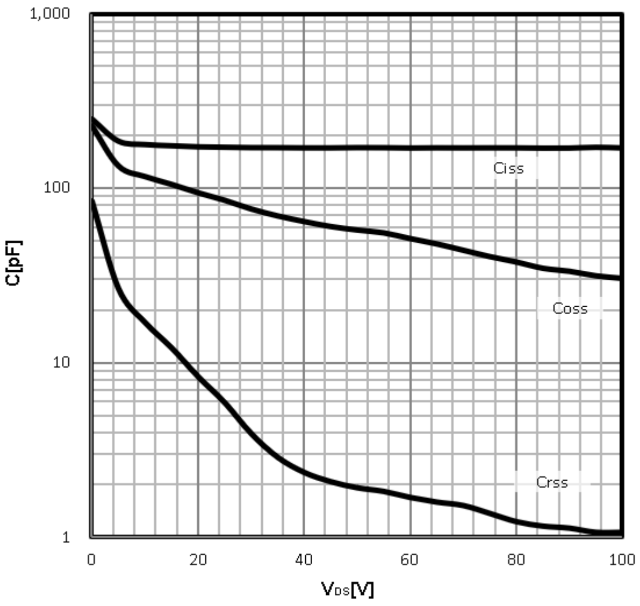
Typ. gate charge

$V_{GS}=f(Q_g)$; I_D=10A

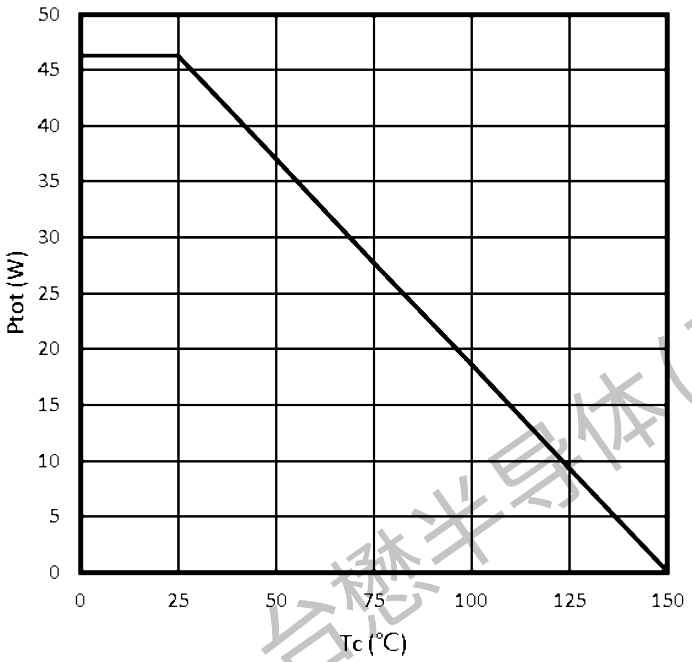


Typ. capacitances

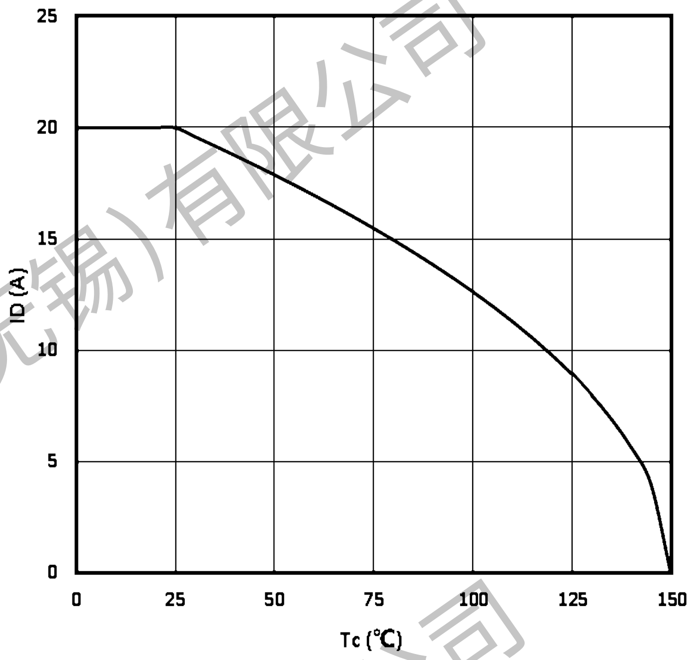
C =f(V_{DS}); V_{GS}=0V; f =1MHz



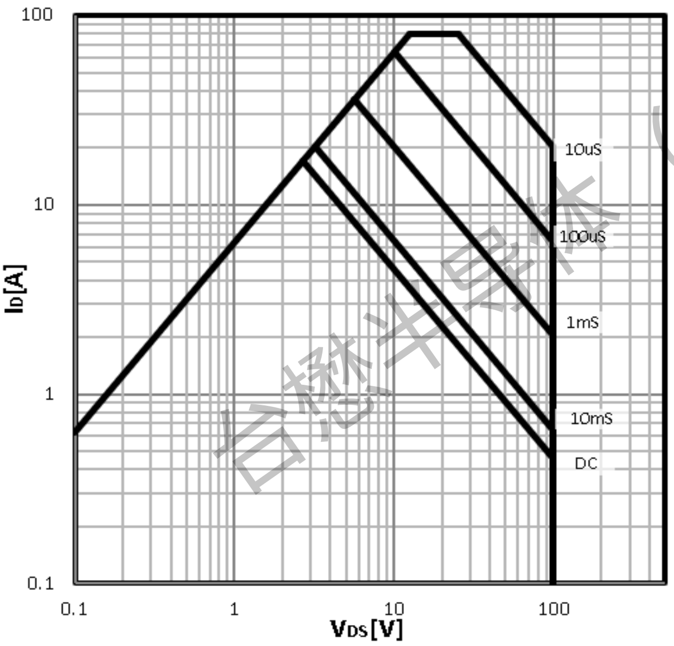
Power Dissipation
$P_{tot}=f(T_C)$



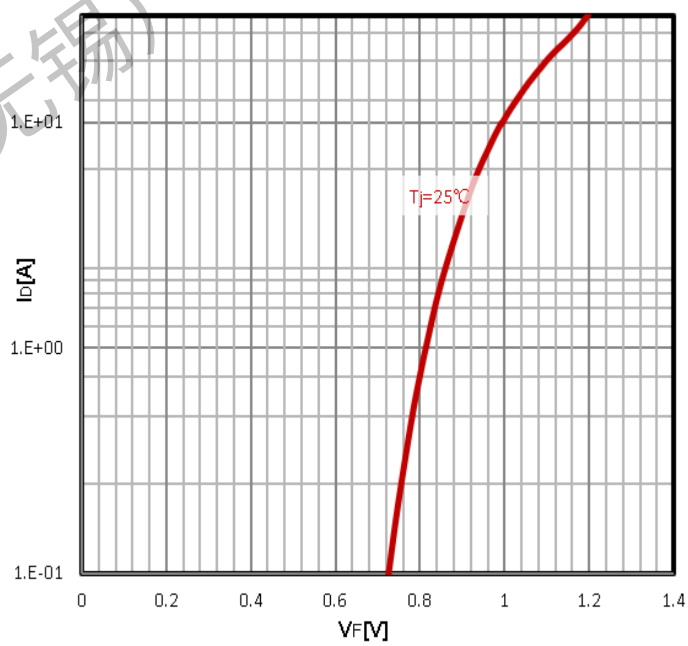
Maximum Drain Current $I_D=f(T_C)$



Safe operating area
$I_D=f(V_{DS})$

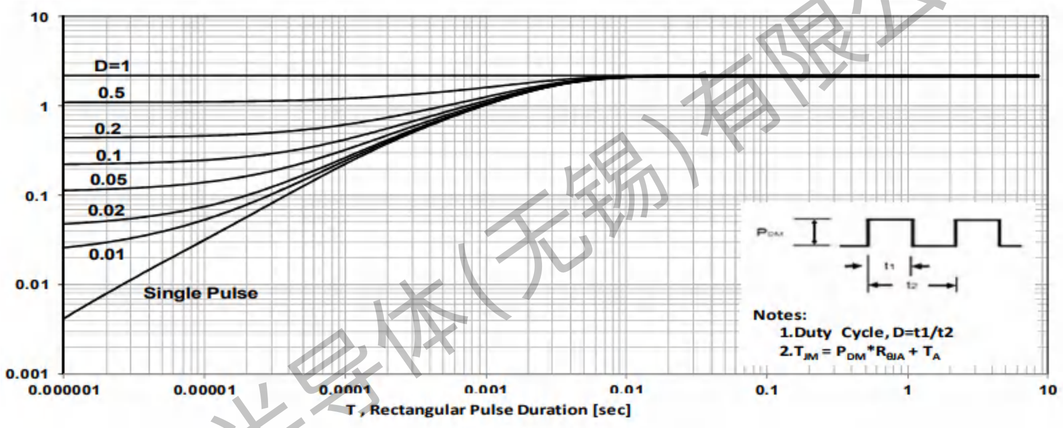


Body Diode Forward Voltage Variation
$I_F=f(V_{GS})$



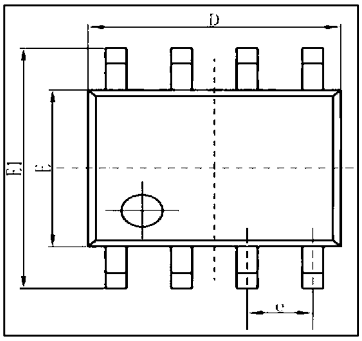
Max. transient thermal impedance

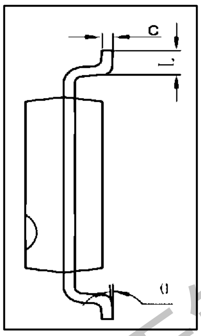
$Z_{thJC}=f(t_p)$

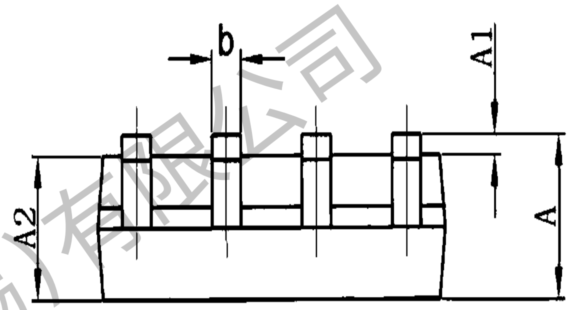


Notes:
1.Duty Cycle, D=t1/t2
2.$T_{JM} = P_{DM} * R_{θJA} + T_A$

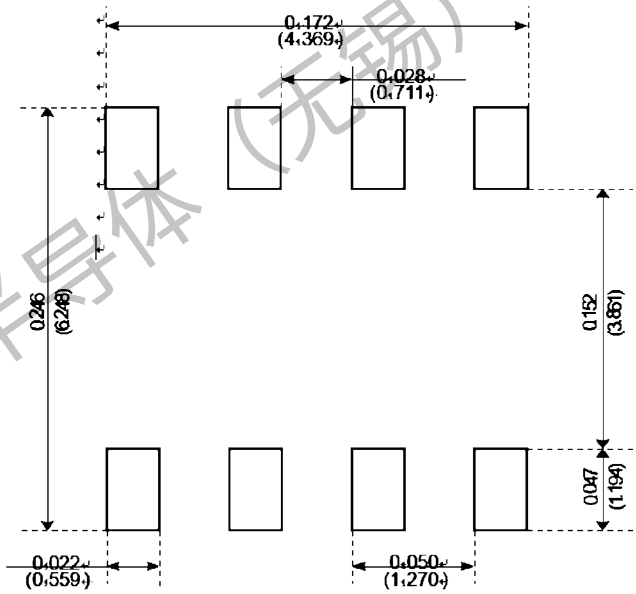
Package Mechanical Data:SOP-8L





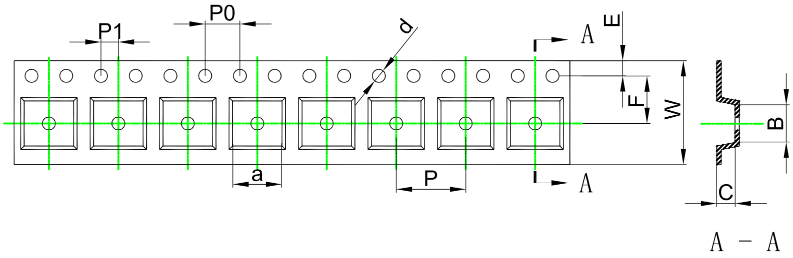


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)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



Recommended Minimum Pads

SOP-8L Embossed Carrier Tape



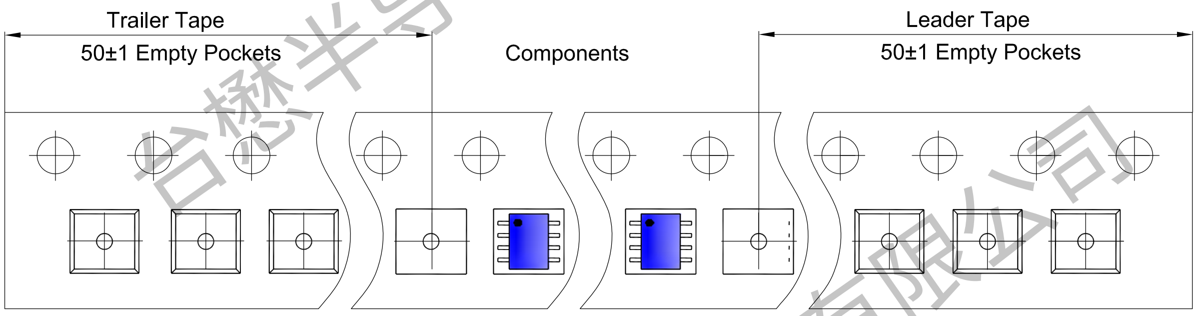
Packaging Description:

SOP-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 2,500 units per 13" or 33cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

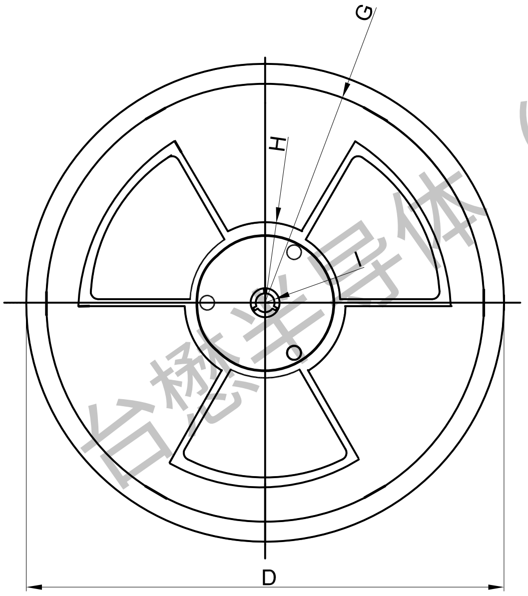
ALL DIM IN mm

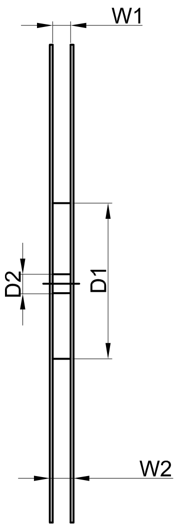
Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
SOP-8L	6.40	5.40	2.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOP-8L Tape Leader and Trailer



SOP-8L Reel





Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
13"Dia	Ø330.00	100.00	13.00	R135.00	R55.00	R6.50	12.00	14.00

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3,000 pcs	13 inch	6,000 pcs	370×355×52	48,000 pcs	400×360×368	

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Revision history:

Date	Rev	Description	Page
2023.07.22	23.07	Original	