V_{DSS}	20 V
I_D	6 A
$R_{DS(ON)}$	16mΩ

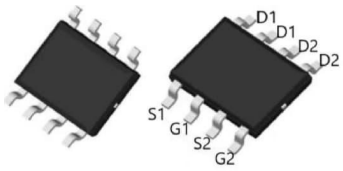
Features

Low Gate Charge
100% UIS Tested, 100% DVDS Tested
High Power and current handing capability
Lead free product is acquired

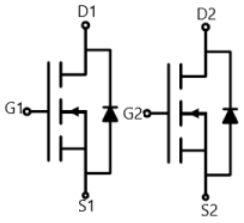
Applications

Load switch
PMW

9926A
GA7M7K



SOP-8 top&bottom view



Schematic Diagram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Limit	Unit
V_{DS}	Drain-Source Voltage (V_{GS}=0V)	20	V
V_{GS}	Gate-Source Voltage (V_{DS}=0V)	±12	V
I_D	Drain Current-Continuous(T_A=25℃)	6	A
	Drain Current-Continuous(T_A=100℃)	3.8	A
$I_{DM\ (pluse)}$	Drain Current-Continuous@ Current-Pulsed (Note 1)	24	A
P_D	Maximum Power Dissipation(T_A=25℃)	0.9	W
	Maximum Power Dissipation(T_A=100℃)	0.3	W
E_{AS}	Avalanche energy (Note 2)	256	mJ
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	℃

Electrical Characteristics (T_J=25℃ unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V I_D=250μA	20			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=20V, V_{GS}=0V T_J=25℃			1	μA
		V_{DS}=20V, V_{GS}=0V T_J=125℃			100	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±12V, V_{DS}=0V			±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	0.5		1	V
g_{FS}	Forward Transconductance	V_{DS}=5V, I_D=1.5A		6.5		S
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}=4.5V, I_D=3A T $_J$=25℃		20	25	mΩ
		V_{GS}=2.5V, I_D=3A T_J=25℃		27	32	mΩ
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=10V,V_{GS}=0V, f=1.0MHz		568		pF
C_{oss}	Output Capacitance			68		pF
C_{rss}	Reverse Transfer Capacitance			60		pF
Rg	Gate resistance	V_{GS}=0V, V_{DS}=0V, f=1.0MHz		9		Ω
Switching Parameters						
$t_{d(on)}$	Turn-on Delay Time	V_{GS}=4.5V, V_{DS}=10V, R_L=6.7Ω, R_{GEN}=3Ω		14		nS
t_r	Turn-on Rise Time			8		nS
$t_{d(off)}$	Turn-Off Delay Time			44		nS
t_f	Turn-Off Fall Time			15		nS
Q_g	Total Gate Charge	V_{GS}=4.5V, V_{DS}=10V, I_D=1.5A		55		nC
Q_{gs}	Gate-Source Charge			8.7		nC
Q_{gd}	Gate-Drain Charge			13.5		nC
Source-Drain Diode Characteristics						
I_{SD}	Source-Drain Current (Body Diode)				6	A
V_{SD}	Forward on Voltage (Note 3)	V_{GS}=0V, I_S=1.5A			1.2	V
t_{rr}	Reverse Recovery Time	I_F=1.5A, dI/dt=500A/μs		44		ns
Q_{rr}	Reverse Recovery Charge	I_F=1.5A, dI/dt=500A/μs		49		nC

Notes 1.Repetitive Rating: Pulse width limited by maximum junction temperature.
Notes 2.E_{AS} condition: T_J=25℃,V_{DD}=20V,V_G=10V, Rg=25Ω, L=0.5mH.
Notes 3.Repetitive Rating: Pulse width limited by maximum junction temperature.

Thermal Characteristic

Symbol	Parameter	Typ	Max	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient		144	℃/W

RATING AND CHARACTERISTIC CURVES

Figure 1. Output Characteristics

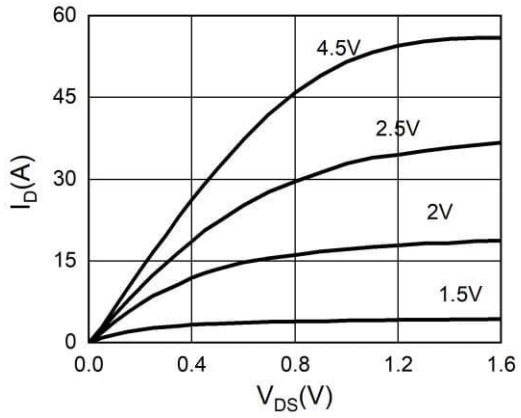


Figure 2. Transfer Characteristics

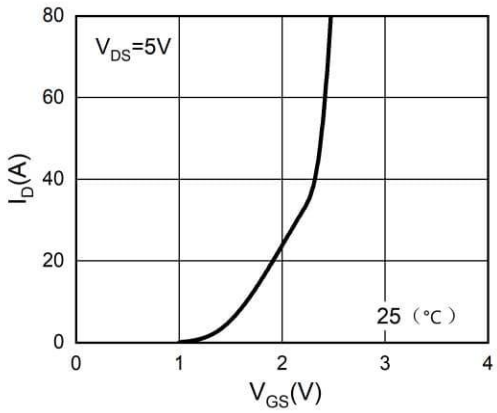


Figure 3. Power Dissipation

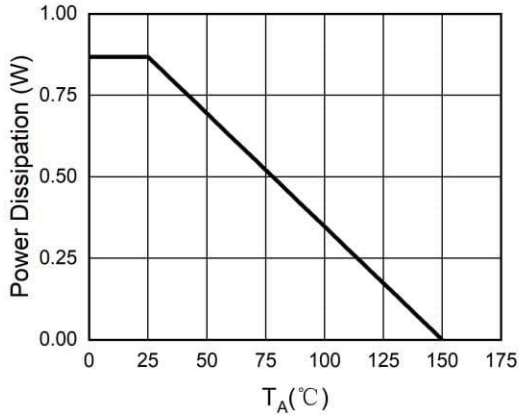


Figure 4. Drain Current

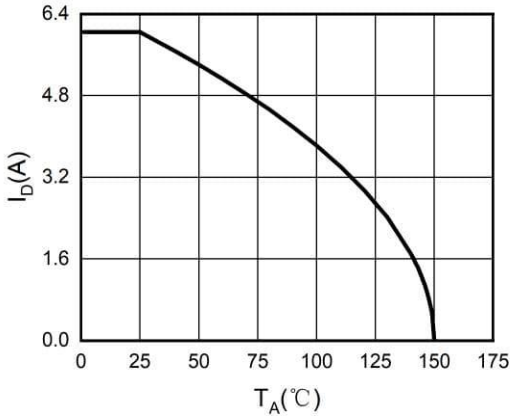


Figure 5. BV_{DSS} vs Junction Temperature

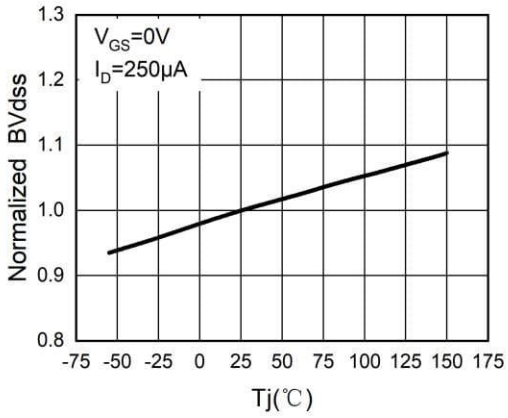
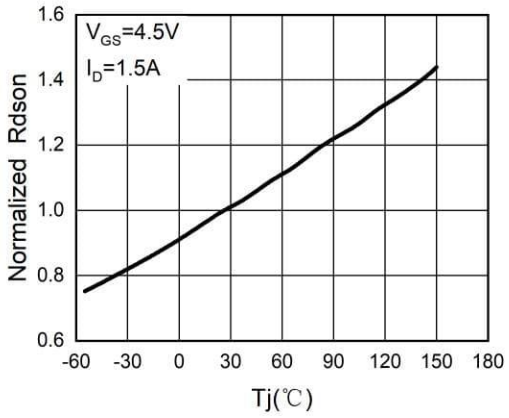


Figure 6. $R_{DS(ON)}$ vs Junction Temperature



RATING AND CHARACTERISTIC CURVES

Figure 7. Gate Charge Waveforms

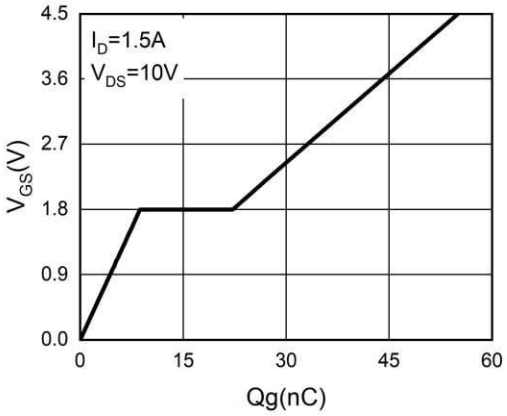


Figure 8. Capacitance

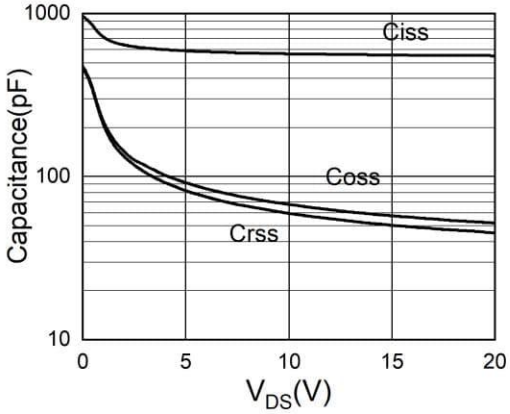


Figure 9. Body-Diode Characteristics

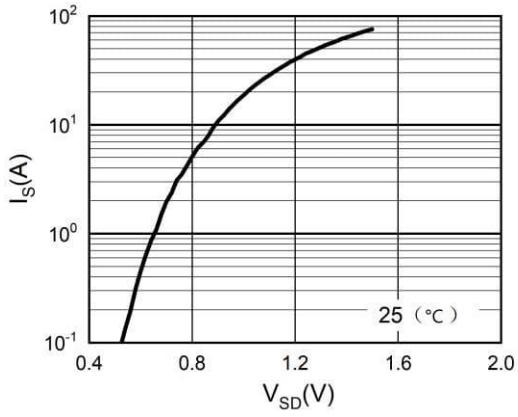
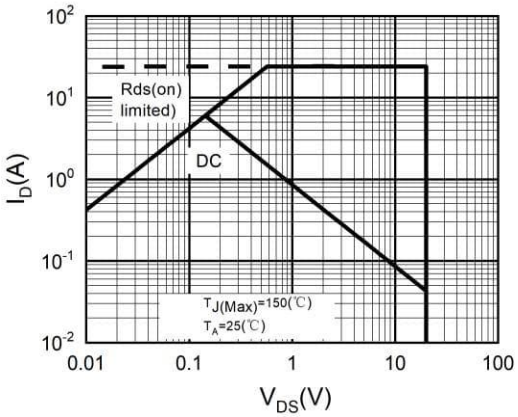


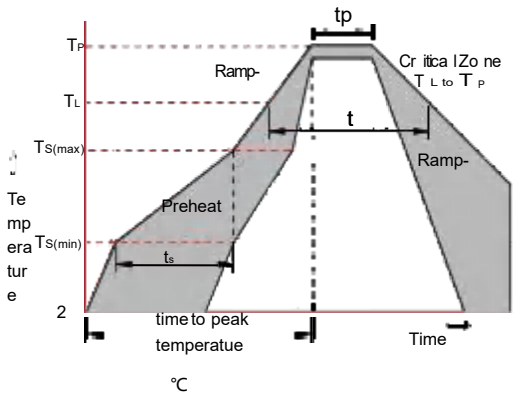
Figure 10. Maximum Safe Operating Area



Soldering parameters

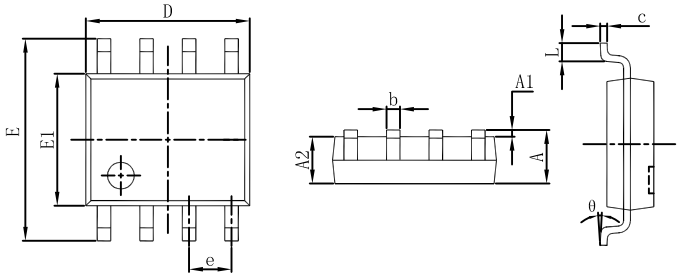
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG5: Reflow condition

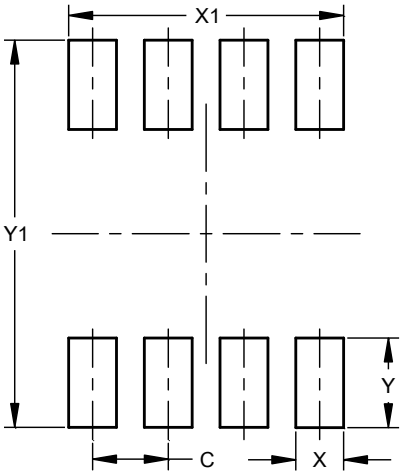


Package Dimensions & Suggested Pad Layout

SOP-8



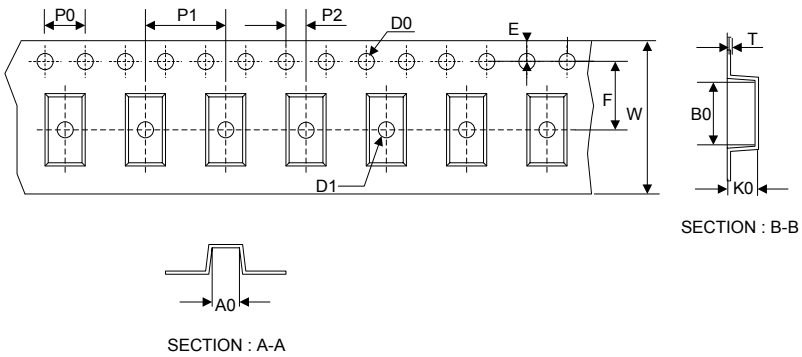
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	**Max**	**Min**	**Max**
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°



Dimensions	Value (in mm)
C	1.27
X	0.70
X1	4.51
Y	2.00
Y1	7.00

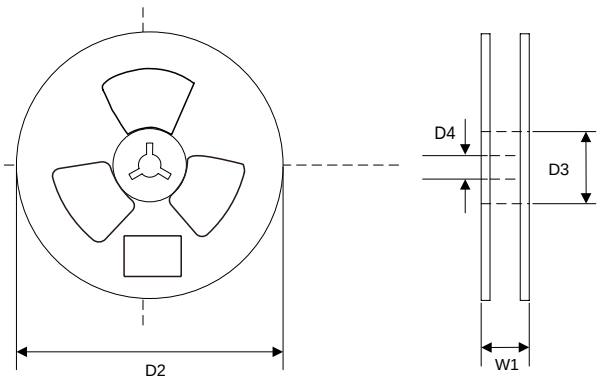
Tape & rell specification

Tape



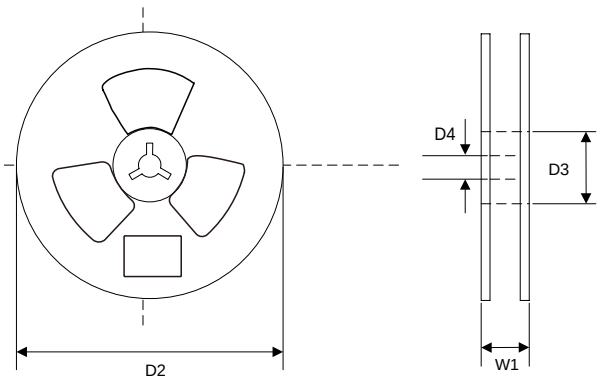
Symbol	Dimension (mm)
P0	4.00±0.20
P1	8.00±0.20
P2	2.00±0.20
D0	1.55±0.20
D1	1.55±0.20
E	1.75±0.15
F	5.50±0.20
W	12.00±0.20
A0	7.00±0.20
B0	5.70±0.20
K0	1.35±0.20
T	0.23±0.20

13” Reel



D2	330.0±5.0
D3	73Min.
D4	13.5±2.5
W1	16.0±3.0
Quantity: 3000PCS	

13” Reel



D2	330.0±5.0
D3	73Min.
D4	13.5±2.5
W1	16.0±3.0
Quantity: 4000PCS	