Features

- ★ Green Device Available
- ★ Super Low Gate Charge
- ★ Excellent Cdv/dt effect decline
- ★ Advanced high cell density Trench technology

Product Summary

V_{DS}=20V

I_D=6A (V_{GS}=4.5V)

$R_{DS(ON)}$<26mΩ(V_{GS}=4.5V) Typ=20mΩ

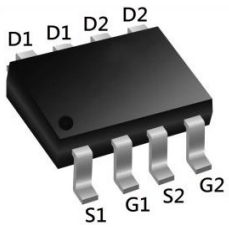
$R_{DS(ON)}$<32mΩ(V_{GS}=2.5V) Typ=25mΩ

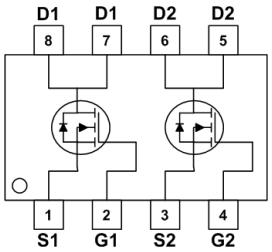
Description

The RJ9926A uses advanced trench technology anddesign to provide excellent $R_{DS(ON)}$ with low gatecharge.

It can be used in a wide variety ofapplications.

Dual SOP8 Pin Configuration





Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	±12	V
I_D@T_A=25℃	Continuous Drain Current, V_{GS} @ 4.5V[1]	6.0	A
I_D@T_A=70℃	Continuous Drain Current, V_{GS} @ 4.5V[1]	4.8	A
I_{DM}	Pulsed Drain Current[2]	25	A
P_D@T_A=25℃	Total Power Dissipation[3]	1.65	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient [1]	---	78	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-Case[1]	--	-	℃/W

Electrical Characteristics (TJ=25°C unless otherwise noted)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	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,	-	-	1.0	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS}=0V, V_{GS} =±12V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	0.4	0.7	1.0	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	V_{GS}=4.5V, I_D=6A	-	20	26	mΩ
		V_{GS}=2.5V, I_D=5A	-	25	32	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=10V, V_{GS}=0V, f=1.0MHz	-	358	-	pF
C_{oss}	Output Capacitance		-	69.3	-	pF
C_{rss}	Reverse Transfer Capacitance		-	58.5	-	pF
Q_g	Total Gate Charge	V_{DS}=10V, I_D=3A, V_{GS}=4.5V	-	5.6	-	nC
Q_{gs}	Gate-Source Charge		-	0.8	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	1	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=10V, I_D=6A, R_{GEN}=3Ω, V_{GS}=4.5V	-	16	-	ns
t_r	Turn-on Rise Time		-	51	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	21	-	ns
t_f	Turn-off Fall Time		-	19	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	6	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	24	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS}=0V, I_S=6A	-	-	1.2	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Performance Characteristics

Figure1: Output Characteristics

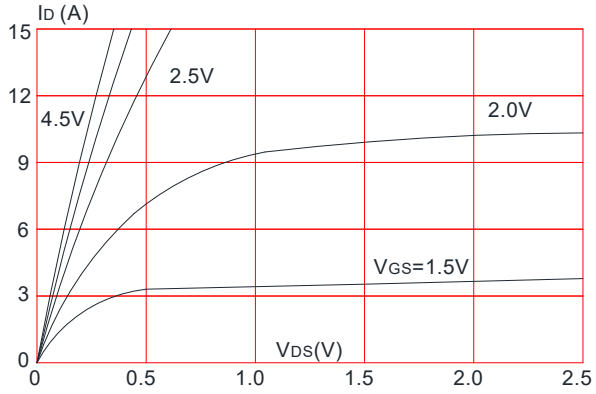


Figure 2: Typical Transfer Characteristics

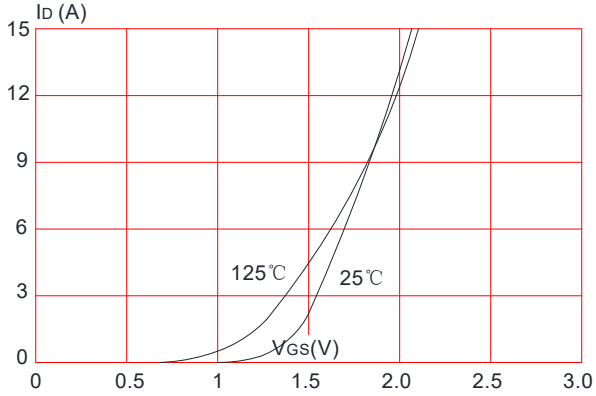


Figure 3: On-resistance vs. Drain Current

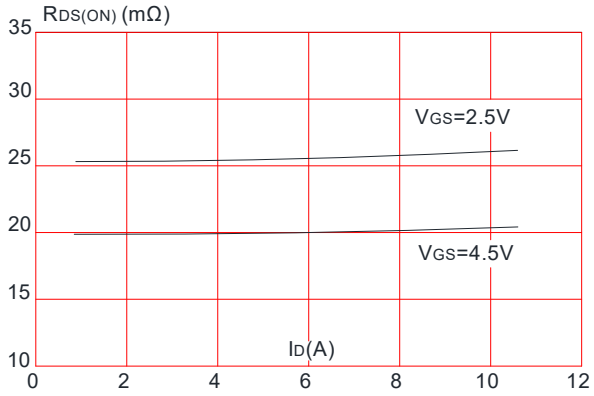


Figure 4: Body Diode Characteristics

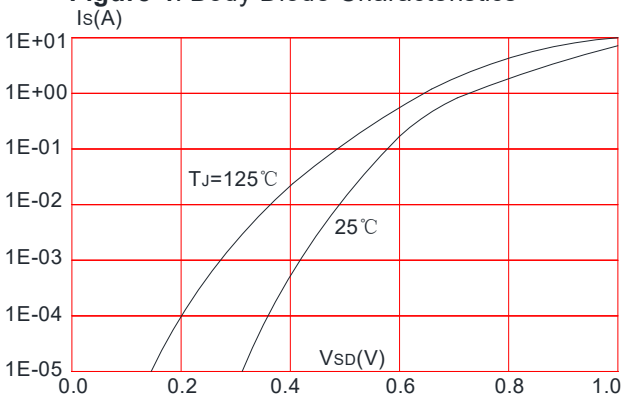


Figure 5: Gate Charge Characteristics

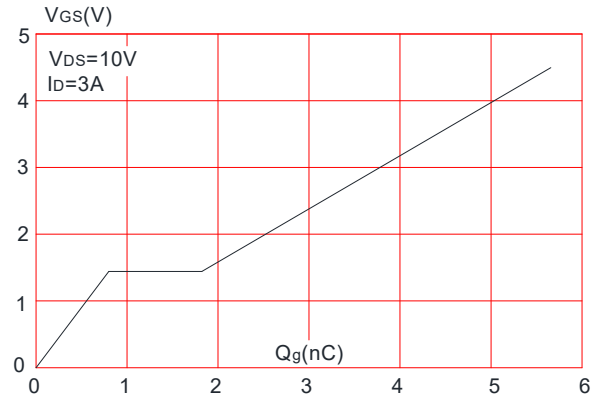


Figure 6: Capacitance Characteristics

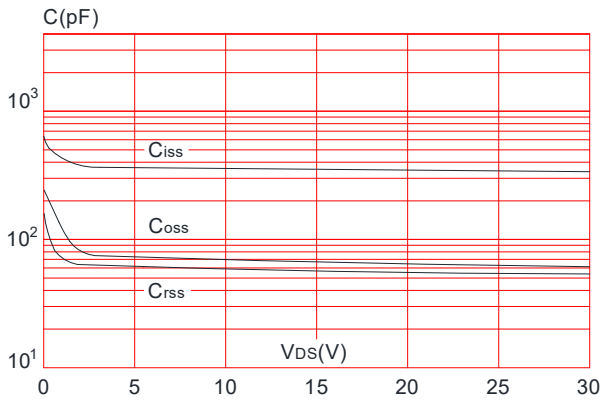


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

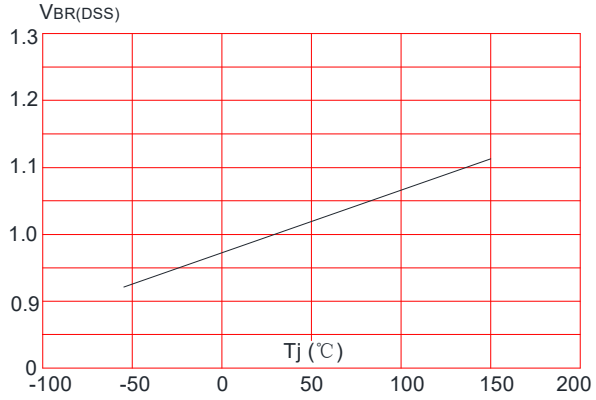


Figure 8: Normalized on Resistance vs. Junction Temperature

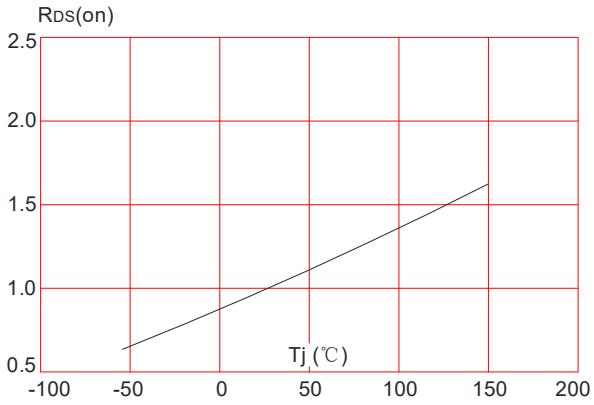


Figure 9: Maximum Safe Operating Area

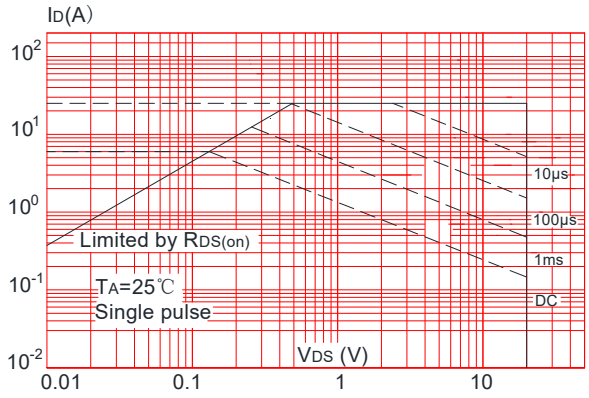


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

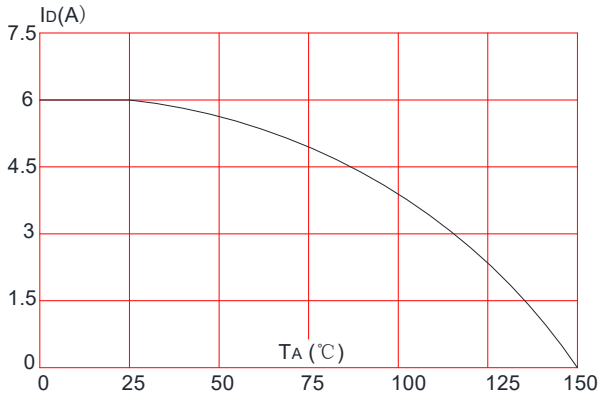
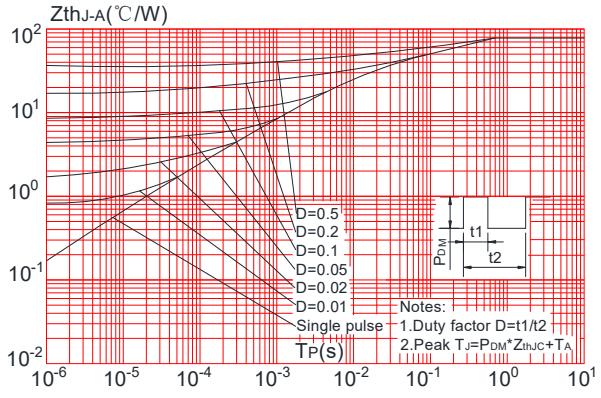
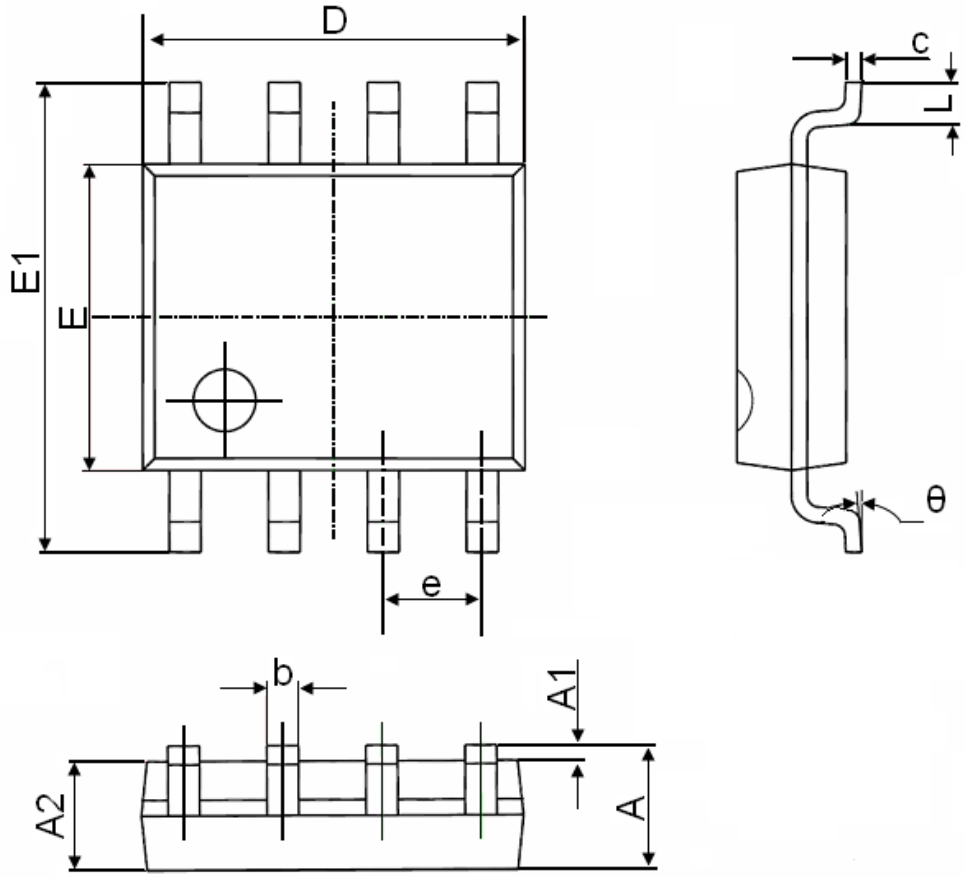


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



Package Mechanical Data-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	0.006	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°