

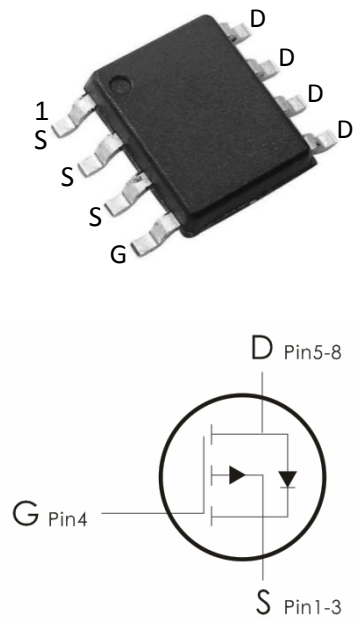
Description:

This P-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.

Features:

- 1) $V_{DS}=-60V, I_D=-9A, R_{DS(ON)}<30m\Omega @ V_{GS}=-10V$ (Typ : $24m\Omega$)
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra $R_{DS(ON)}$.
- 5) Excellent package for good heat dissipation.



Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
DOS9P06	9P06	SOP-8	3000 pcs/Reel

Absolute Maximum Ratings: ($T_A=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	-9	A
	Continuous Drain Current - $T_A=70^\circ C$	-5.2	
I_{DM}	Pulsed Drain Current ¹	-36	
P_D	Power Dissipation	4.1	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	$^\circ C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	30	$^\circ C/W$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62	$^\circ C/W$

Electrical Characteristics: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μA	-60	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =-60V	---	---	-1	μA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0A	---	---	±100	nA
On Characteristics						
V _{GS(th)}	Gate-Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μA	-1	-1.8	-2.5	V
R _{DS(ON)}	Drain-Source On Resistance	V _{GS} =-10V, I _D =-9A	---	24	30	mΩ
		V _{GS} =-4.5V, I _D =-6A	---	32	39	
G _{FS}	Forward Transconductance	V _{DS} =-5V, I _D =-15A	---	35	---	S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-30V, V _{GS} =0V, f=1MHz	---	4025	---	pF
C _{oss}	Output Capacitance		---	133	---	
C _{rss}	Reverse Transfer Capacitance		---	97	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DD} =-30V R _{GEN} =3 Ω, V _{GS} =-10V	---	12	---	ns
t _r	Rise Time		---	9	---	ns
t _{d(off)}	Turn-Off Delay Time		---	63	---	ns
t _f	Fall Time		---	13	---	ns
Q _g	Total Gate Charge	V _{GS} =-10V, V _{DS} =-30V, I _D =-20A	---	53	---	nC
Q _{gs}	Gate-Source Charge		---	10	---	nC
Q _{gd}	Gate-Drain “Miller” Charge		---	12	---	nC
Drain-Source Diode Characteristics						
V _{SD}	Source-Drain Diode Forward Voltage	V _{GS} =0V, I _S =-15A, T _J =25℃	---	-0.88	-1.2	V
I _S	Continuous Drain Current	V _D =V _G =0V	---	-9	---	V
I _{SM}	Pulsed Drain Current	V _D =V _G =0V	---	-36	---	V

t_{rr}	Reverse Recovery Time	$I_{sd}=-20A, V_{GS}=0V$ $.dI/dt=-500A/\mu s$	---	26	---	ns
Q_{rr}	Reverse Recovery Charge		---	29	---	nc

Notes:

1.Repetitive Rating: Pulse width limited by maximum junction temperature.

Typical Characteristics: ($T_c=25^\circ C$ unless otherwise noted)

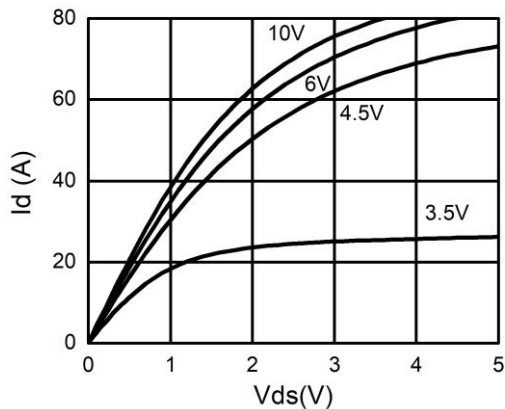


Figure 1. Output Characteristics

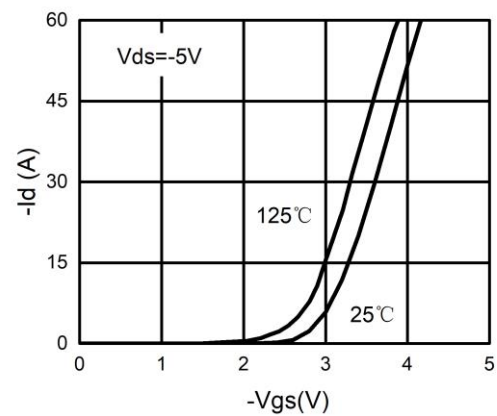


Figure 2. Transfer Characteristics

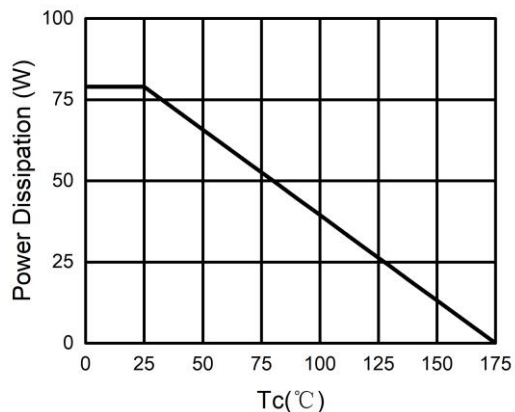


Figure 3. Power Dissipation

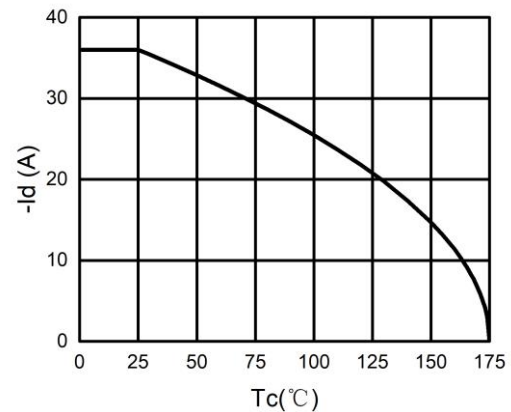


Figure 4. Drain Current

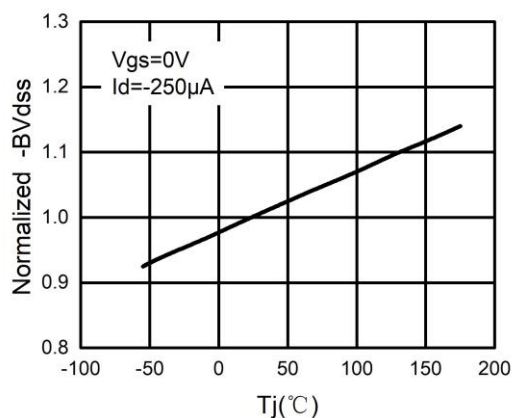


Figure 5. BV_{DSS} vs Junction Temperature

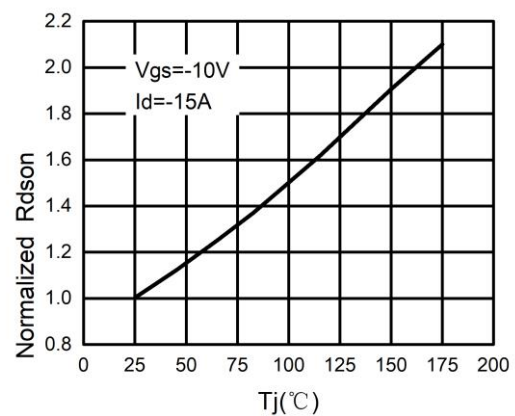


Figure 6. $R_{DS(ON)}$ vs Junction Temperature

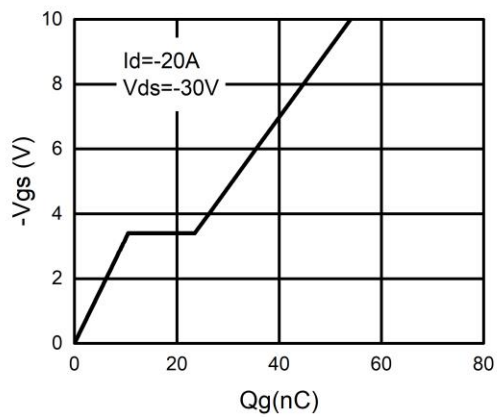


Figure 7. Gate Charge Waveforms

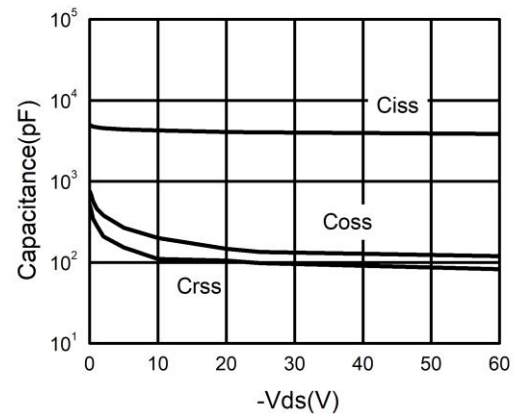


Figure 8. Capacitance

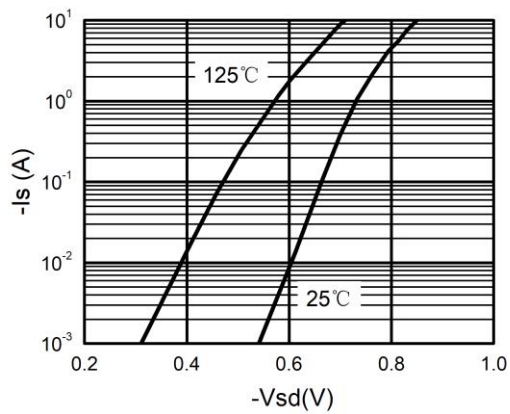


Figure 9. Body-Diode Characteristics

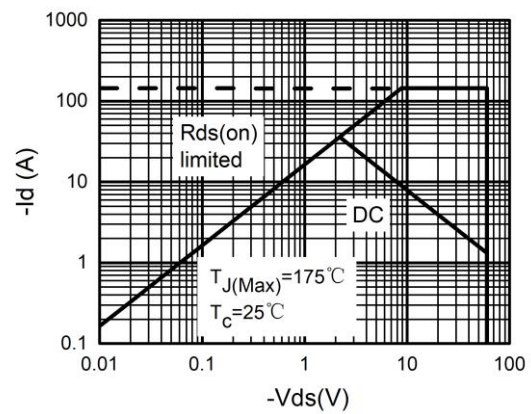
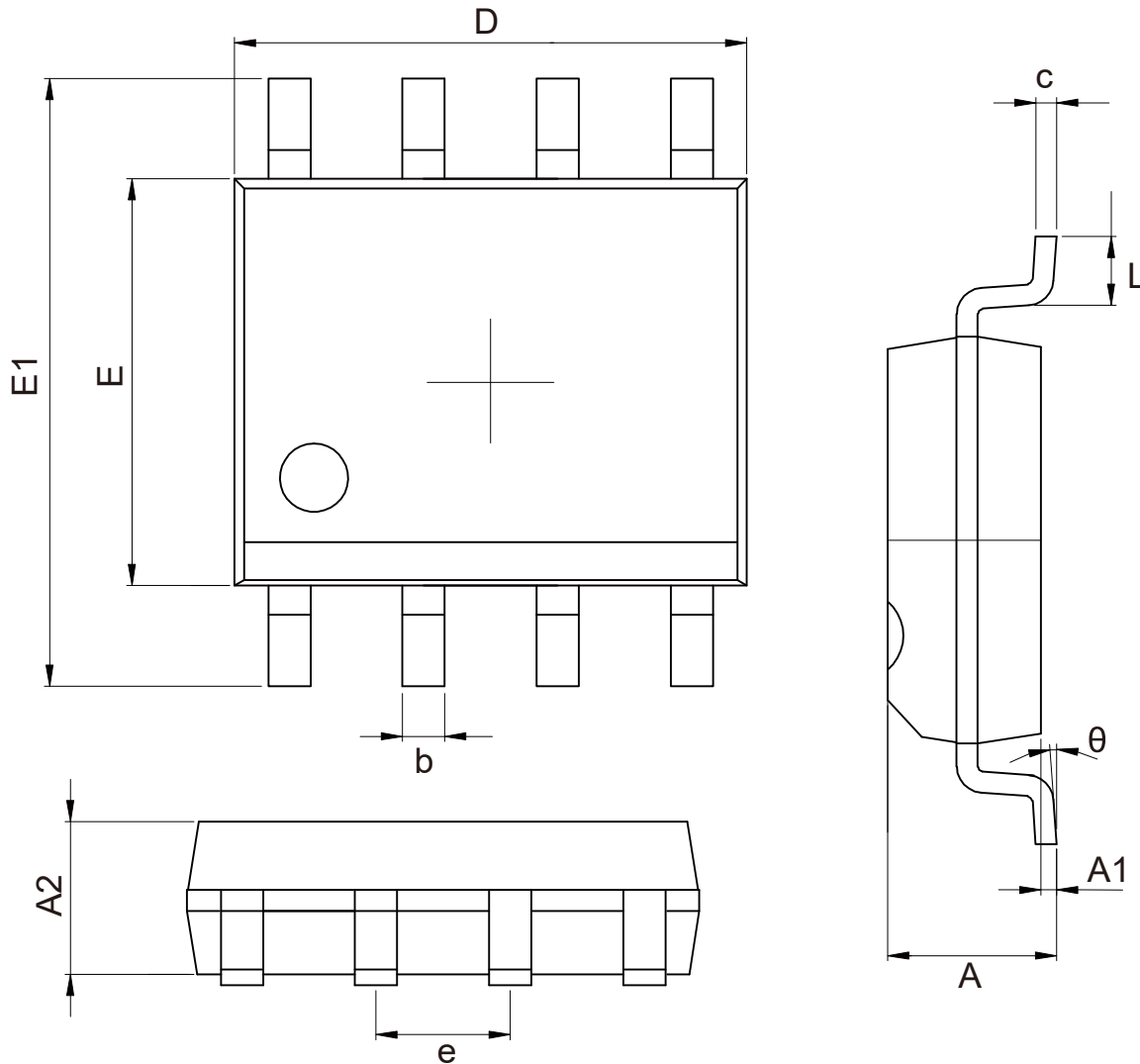


Figure 10. Maximum Safe Operating Area

SOP-8 Package Information:



COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER			
SYMBOL	MIN	NOM	MAX
A	1.350	—	1.750
A1	0.100	—	0.250
A2	1.350	—	1.550
b	0.330	—	0.510
c	0.170	—	0.250
D	4.700	—	5.100
E	3.800	3.900	4.000
E1	5.800	—	6.200
e	1.270BSC		
L	0.400	—	1.270
θ	0°	--	8°

Unit:mm

Marking Information:

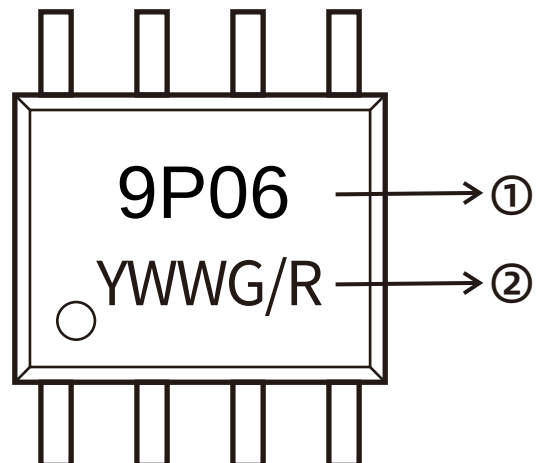
①. Part NO.

②. Date Code(YWWG / R)

Y : Year Code , last digit of the year

WW : Week Code(01-53)

G/R : G(Green) /R(Lead Free)



Previous Version

Version	Date	Subjects (major changes since last revision)
1.1	2024-04-02	Release of final version

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