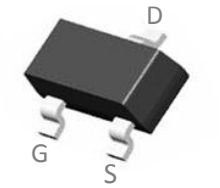
Description：

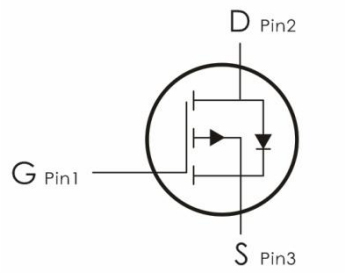
This P-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.



Features：

1) V_{DS}=-60V,I_D=-3.5A,$R_{DS(ON)}$<100mΩ @V_{GS}=-10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra low $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.



Package Marking and Ordering Information：

Part NO.	Marking	Package	Packing
DO4P06SA	4P06S	SOT-23-3	3000pcs/Reel

Absolute Maximum Ratings： (T_A=25℃ 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 CurrentT_A=25℃	-3.5	A
	Continuous Drain CurrentT_A=100℃	-2.7	
I_{DM}	Pulsed Drain Current[1]	-16	
P_D	Power Dissipation	2	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta Jc}$	Thermal Resistance,Junction to case	3.7	℃/W

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	-60	-72	---	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=250μA	-1	-1.8	-2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=-10V,I_D=-10A	---	90	100	mΩ
		V_{GS}=-4.5V,I_D=-8A	---	100	130	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=-25V, V_{GS}=0V, f=1MHz	---	1449	---	pF
C_{oss}	Output Capacitance		---	47	--	
C_{rss}	Reverse Transfer Capacitance		---	34	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=-30V, R_{ENG}=3Ω ,V_{GS}=-10V	---	9.6	---	ns
t_r	Rise Time		---	5.4	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	28	---	ns
t_f	Fall Time		---	5	---	ns
Q_g	Total Gate Charge	V_{GS}=-10V, V_{DS}=-30V, I_D=-10A	---	23.6	---	nc
Q_{gs}	Gate-Source Charge		---	2	---	nc
Q_{gd}	Gate-Drain “Miller” Charge		---	7.1	---	nc
Drain-Source Diode Characteristics						
I_S	Continuous Drain Curren	VD=VG=0V	---	---	-3.5	A
I_{SM}	Pulsed Drain Current		---	---	-16	A
Trr	Reverse Recovery Time	I_F=-10A, dI/dt=100A/us	---	34	---	ns
Qrr	Reverse Recovery Charge		---	37	---	nc
V_{SD}	Diode Forward Voltage[2]	V_{GS}=0V, I_{SD}=-10A	---	---	-1.2	V

Notes:

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

2.E_{AS} condition: T_J=25℃,V_{DD}=40V,V_G=-10V, Rg=25Ω, L=0.5mH.

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

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

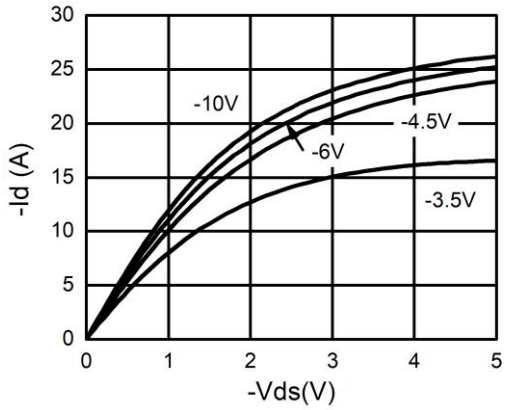


Figure 1. Output Characteristics

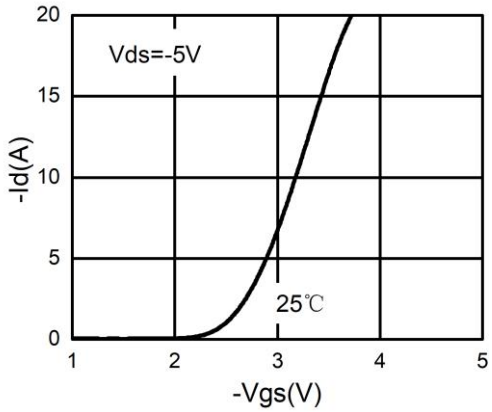


Figure 2. Transfer Characteristics

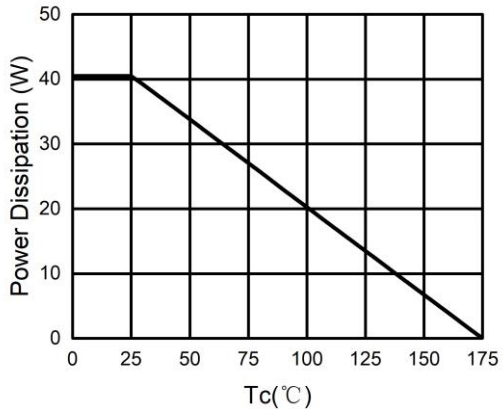


Figure 3. Power Dissipation

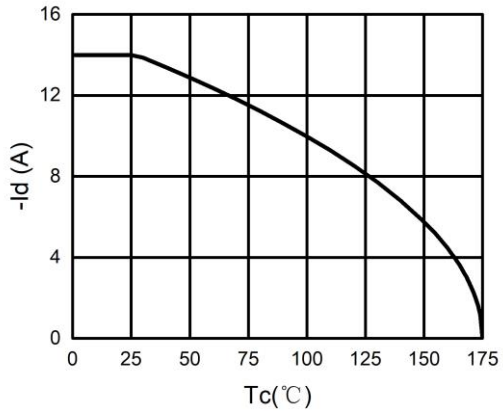


Figure 4. Drain Current

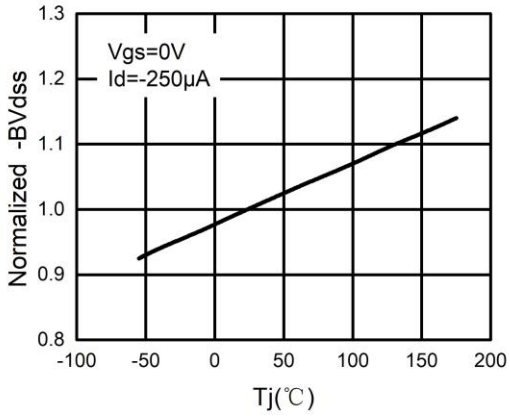


Figure 5. BV_{DSS} vs Junction Temperature

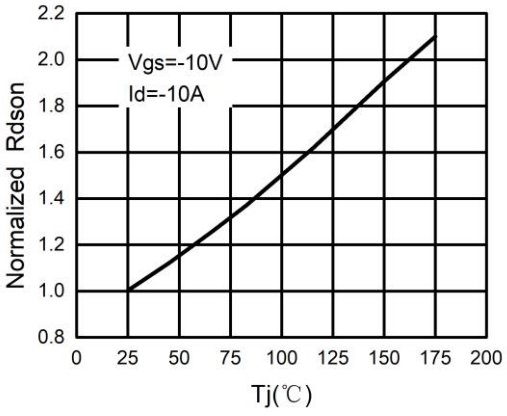


Figure 6. $R_{DS(ON)}$ vs Junction Temperature

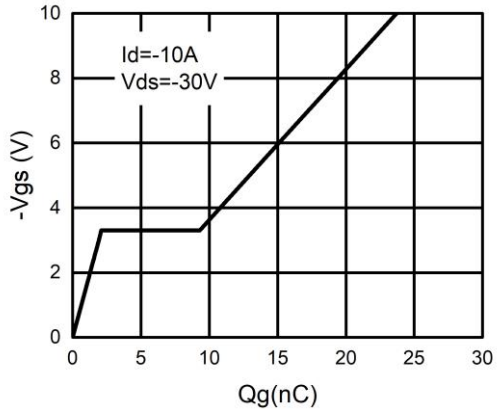


Figure 7. Gate Charge Waveforms

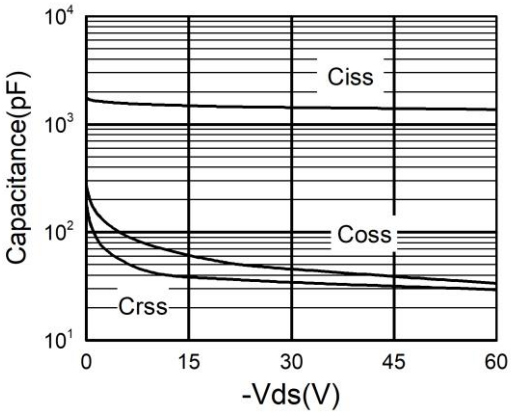


Figure 8. Capacitance

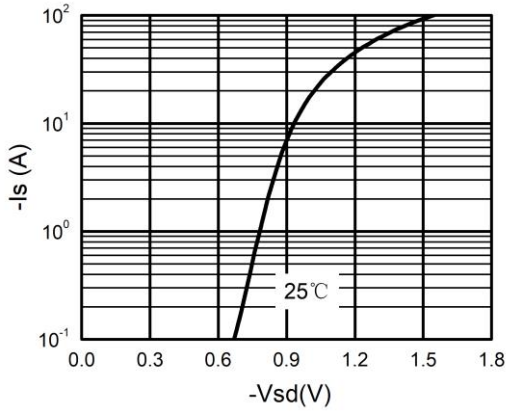


Figure 9. Body-Diode Characteristics

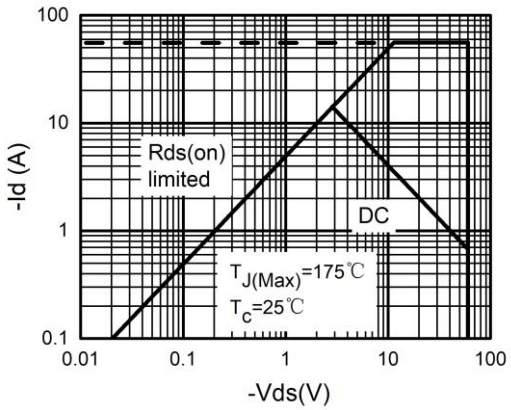
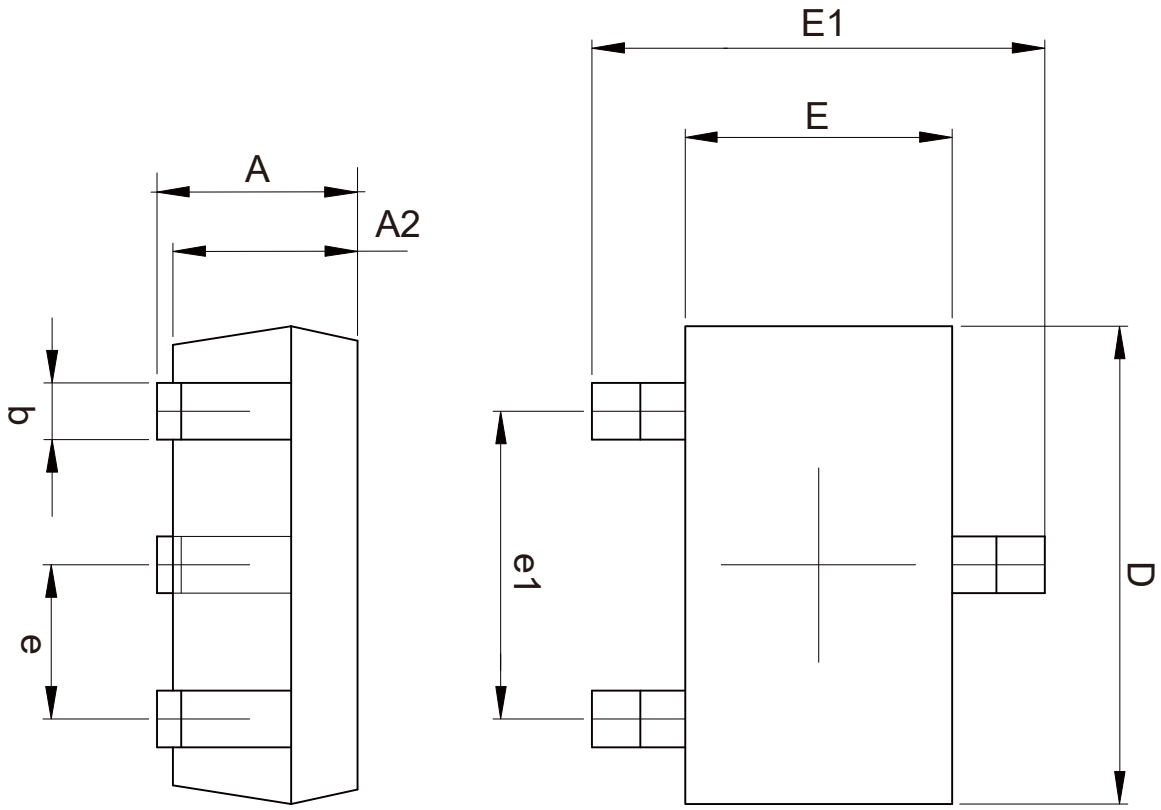
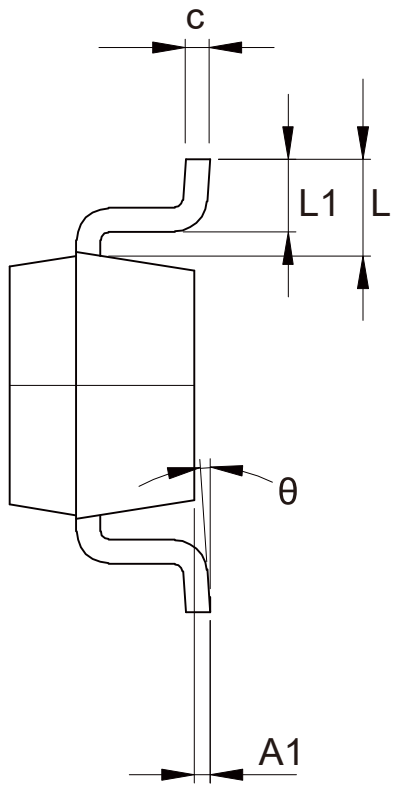


Figure 10. Maximum Safe Operating Area

SOT-23-3Package Outline Data

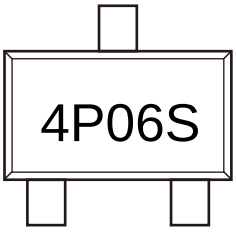




COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER			
SYMBOL	MIN	NOM	MAX
A	1.050	——	1.300
A1	0.000	——	0.200
A2	1.050	——	1.200
b	0.300	0.400	0.500
c	0.100	——	0.200
D	2.820	2.900	3.020
E	1.500	1.600	1.700
E1	2.650	2.800	2.950
e	0.950TYP		
e1	1.800	1.900	2.000
L	0.6REf		
L1	0.300	0.450	0.600
θ	0°	--	8°

Unit:mm

Marking Information：



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