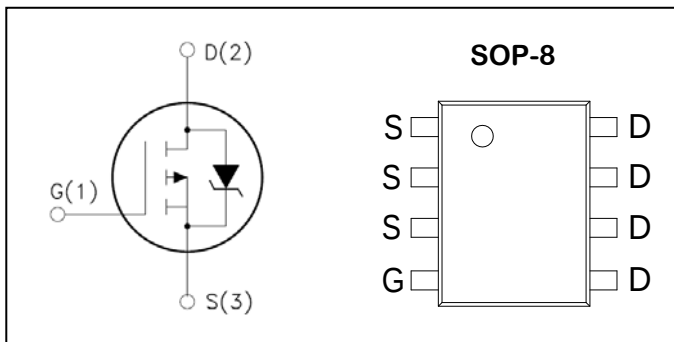


P-Channel Logic Level Enhancement Mode Field Effect Transistor**PRODUCT SUMMARY**

V_{DSS}	I_D	$R_{DS(ON)}$ (m Ω)
-20V	-35A	6m Ω

**Absolute Maximum Ratings** ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter		Ratings	Unit
Common Ratings				
V _{DSS}	Drain-Source Voltage		-20	V
V _{GSS}	Gate-Source Voltage		± 12	
T _J	Maximum Junction Temperature		155	°C
T _{STG}	Storage Temperature Range		-55 to 175	°C
I _S	Diode Continuous Forward Current	T _C =25°C	-35	A
Mounted on Large Heat Sink				
I _{DM}	300μs Pulse Drain Current Tested(1)	T _C =25°C	-14	A
I _D	Continuous Drain Current	T _C =25°C	-35	A
P _D	Maximum Power Dissipation	T _C =25°C	3.0	W

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
R_{thJC}	Thermal resistance junction-case max	4.6	$^\circ\text{C/W}$
R_{thJA}	Thermal resistance junction-ambient max(PCB mounted) (2)	40	$^\circ\text{C/W}$

1. Pulse width limited by maximum junction temperature.
2. 1-in² 2oz Cu PCB board

Electrical Characteristics (TA=25°C Unless Otherwise Noted)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
On/off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =-250uA	-20	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -20V, V _{GS} =0V	--	--	-1	uA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250uA	-0.45	--	-1.0	V
I _{GSS}	Gate Leakage Current	V _{GS} = ± 12V, V _{DS} =0V	--	--	± 100	nA
R _{DS(ON)}	Drain-SourceOn-stateResistance ⁽²⁾	V _{GS} = -2.5V, I _{DS} =-10A	--	6.0	8	mΩ
		V _{GS} = -4.5V, I _{DS} =-20A	--	4.8	6	
g _{FS}	Forward transconductance ⁽²⁾	V _{DS} =- 10V, I _{DS} =-20A	20	--	--	S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} =0V,	--	3000	--	pF
C _{oss}	Output Capacitance	V _{DS} = -10V,	--	650	--	
C _{rss}	Reverse Transfer Capacitance	Frequency=1.0MHz	--	500	--	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time ⁽¹⁾	V _{DS} =-10V, I _D = -1A, V _{GS} = -4.5V, R _{GEN} =6 Ω	--	10	--	ns
t _r	Turn-on Rise Time ⁽¹⁾		--	15	--	
t _{d(OFF)}	Turn-off Delay Time ⁽¹⁾		--	110	--	
t _f	Turn-off Fall Time ⁽¹⁾		--	70	--	
Q _g	Total Gate Charge ⁽¹⁾	V _{DS} =-10V, V _{GS} = -4.5V, I _{DS} =-10A	--	55.0	--	nC
Q _{gs}	Gate-Source Charge ⁽¹⁾		--	10	--	
Q _{gd}	Gate-Drain Charge ⁽¹⁾		--	15	--	
Diode Characteristics						
V _{SD}	Diode Forward Voltage ⁽²⁾	I _{SD} = -35A, V _{GS} = 0	--	--	-1.2	V

NOTES:

1. Independent of operating temperature.
2. Pulse Test : Pulse width ≤ 300 μs, Duty cycle ≤ 2%

Typical Performance Characteristics

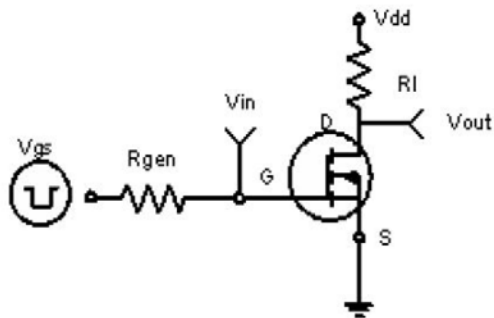


Figure 1: Switching Test Circuit

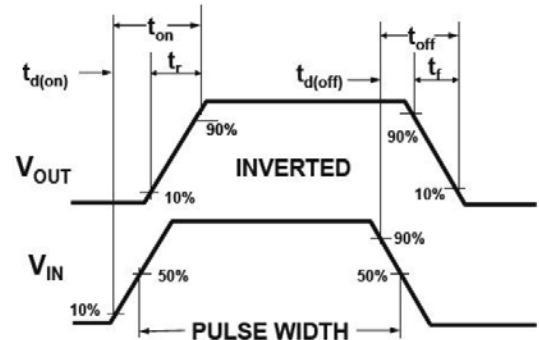


Figure 2: Switching Waveforms

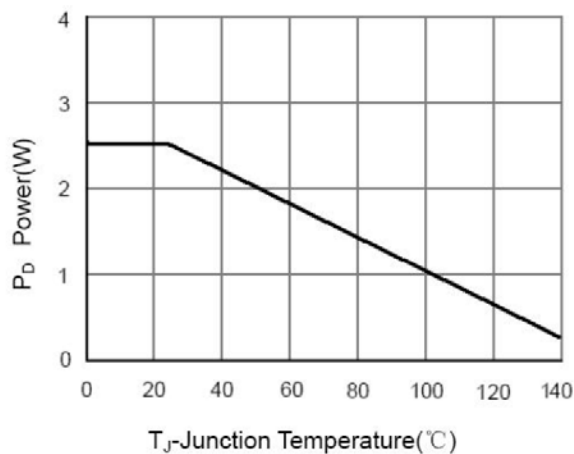


Figure 3 Power Dissipation

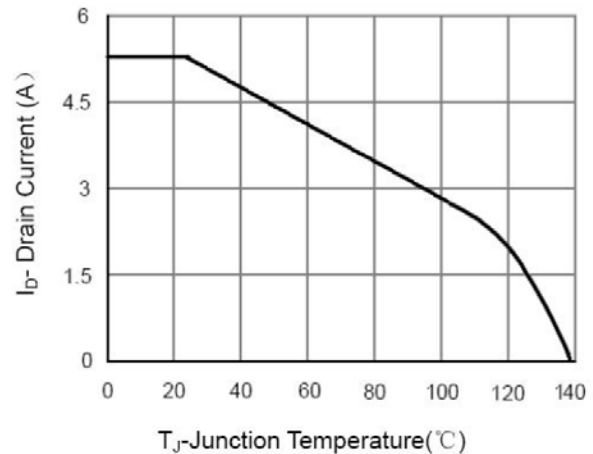


Figure 4 Drain Current

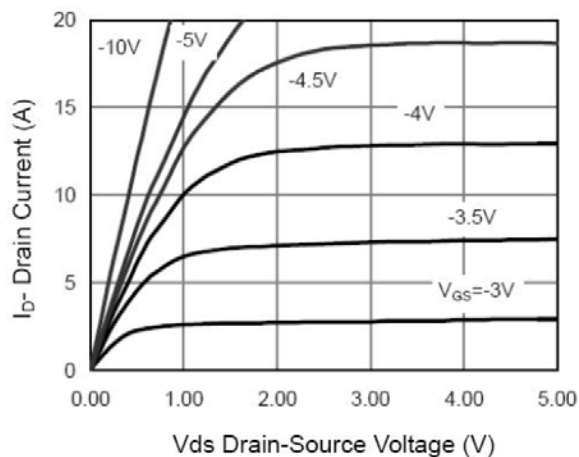


Figure 5 Output Characteristics

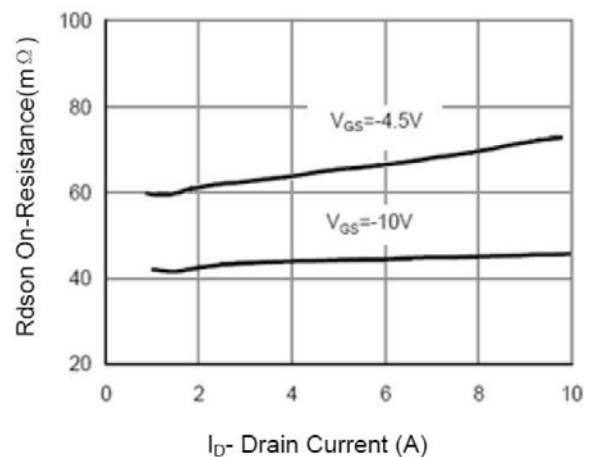


Figure 6 Drain-Source On-Resistance

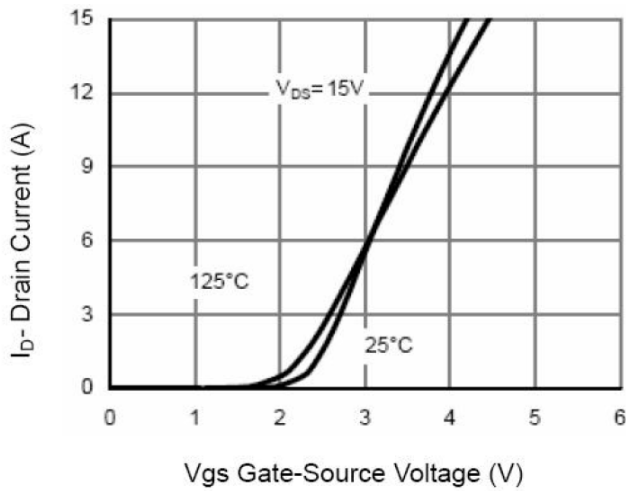


Figure 7 Transfer Characteristics

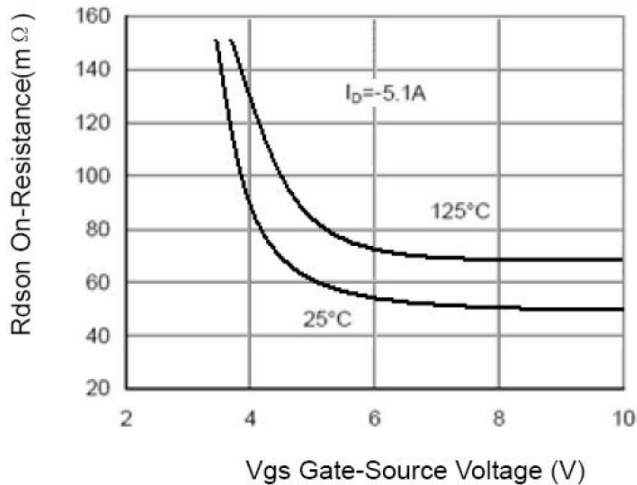


Figure 9 Rdson vs Vgs

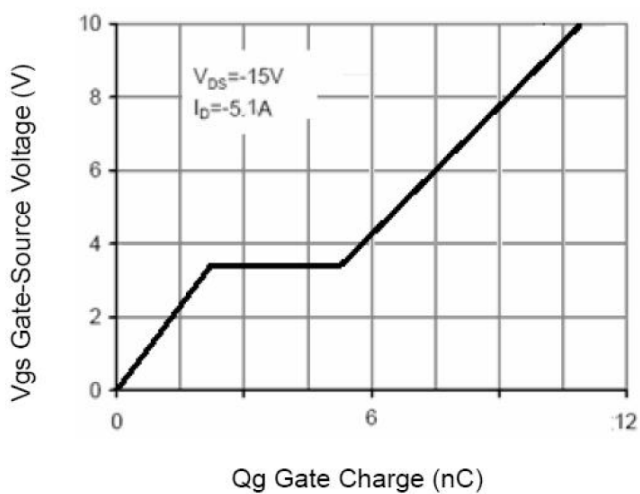


Figure 11 Gate Charge

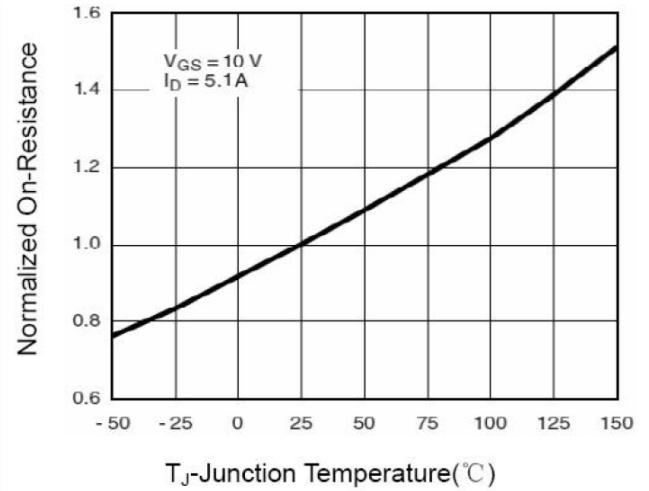


Figure 8 Drain-Source On-Resistance

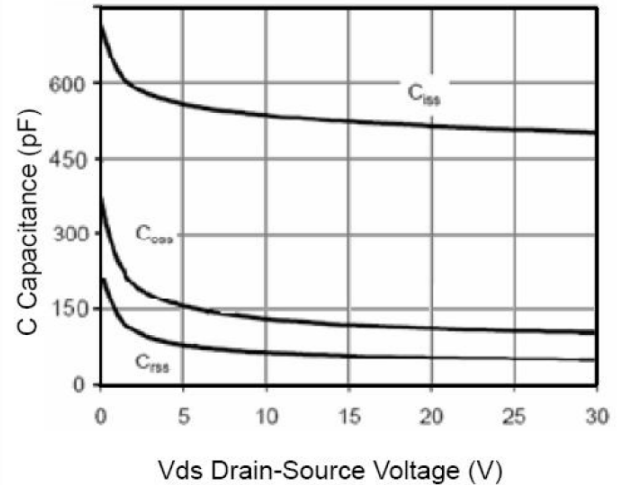


Figure 10 Capacitance vs Vds

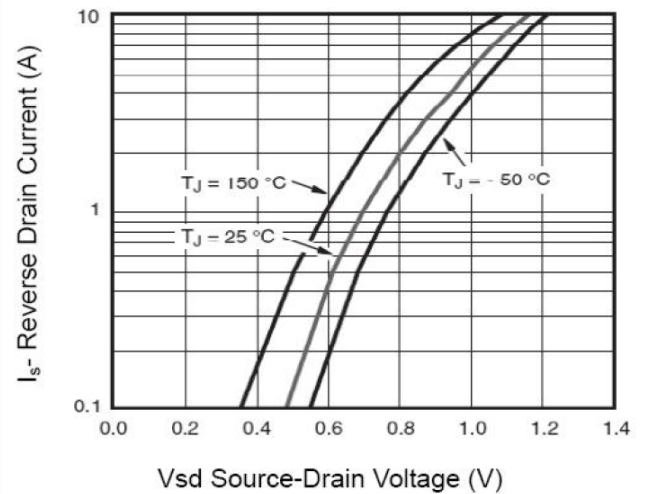


Figure 12 Source- Drain Diode Forward

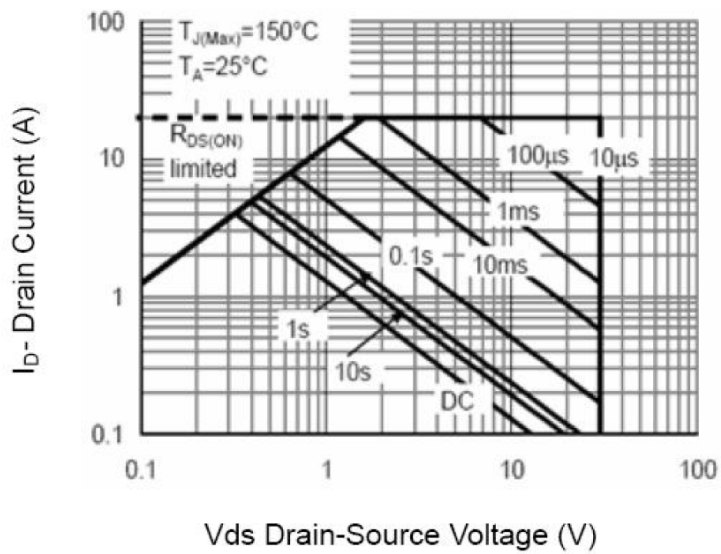


Figure 13 Safe Operation Area

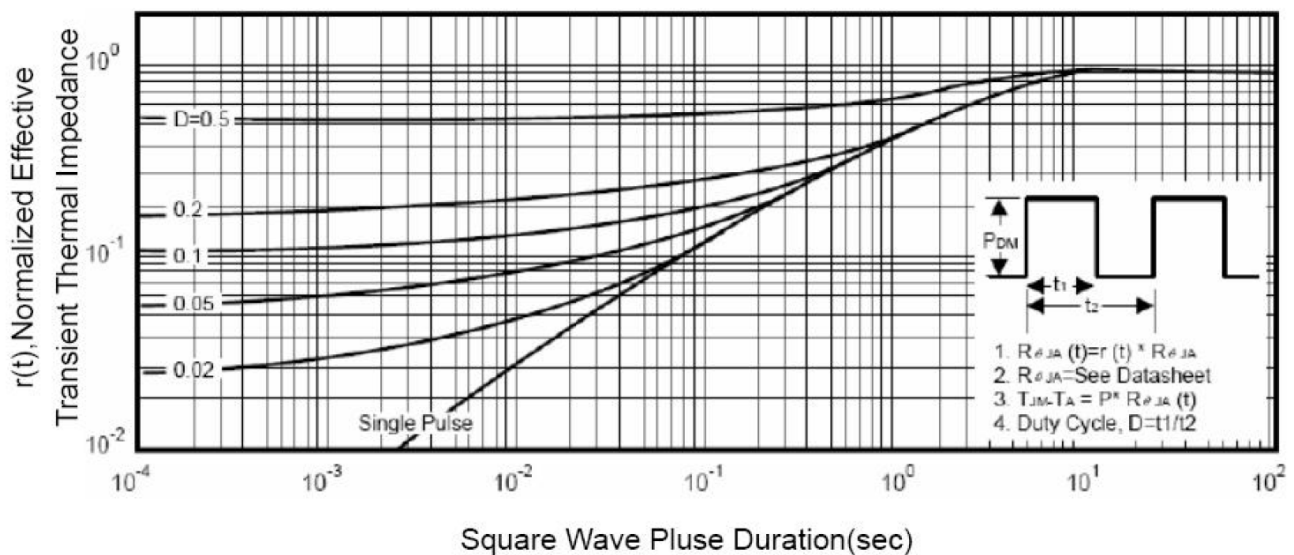
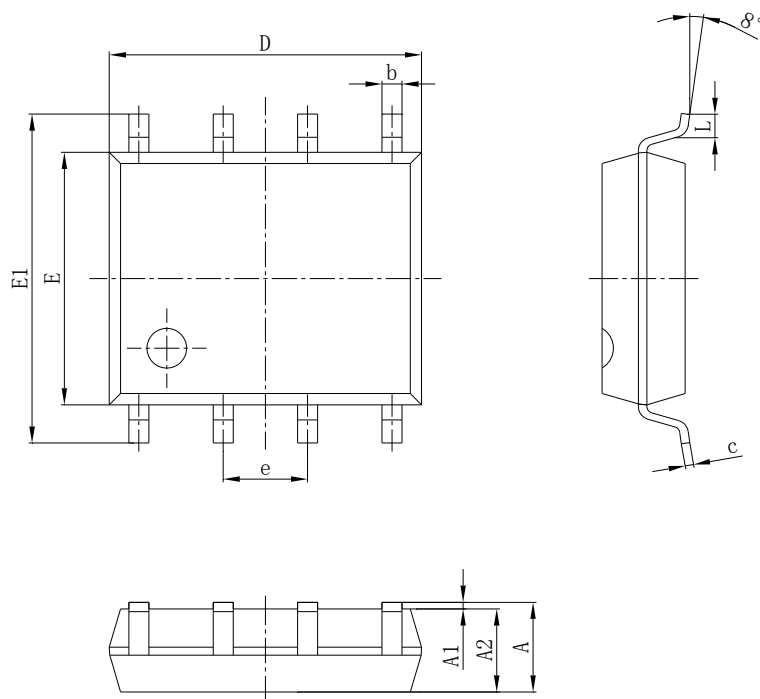


Figure 14 Normalized Maximum Transient Thermal Impedance

PACKAGE MECHANICAL DATA

SOP-8 Package Dimension



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
E1	5.800	6.200	0.228	0.244
E	3.800	4.000	0.150	0.157
e	1.270TYP		0.050TYP	
e1	4.500	4.700	0.177	0.185
L	0.400	1.270	0.016	0.050

Ordering information

Part number	Package	Marking	Packing	Quantity
P2006AS	SOP-8	P2006AS	Embossed tape	4000pcs