Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	6.4mΩ@-10V	-16A
	8.3mΩ@-4.5V	

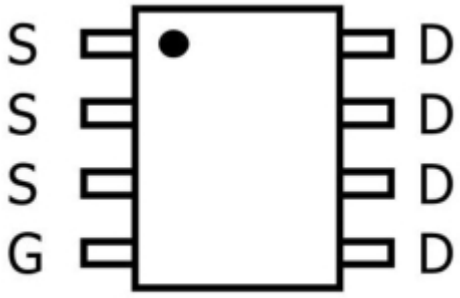
Feature

- V_{DS} = -30V,I_D = -16A, $R_{DS(ON)}$ <8mΩ @ V_{GS}=-10V
- High power and current handing capability
- Lead free product is acquired
- Surface mount package.

Application

- Power management
- Load switch

Package



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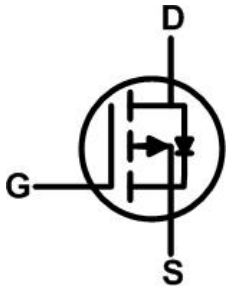
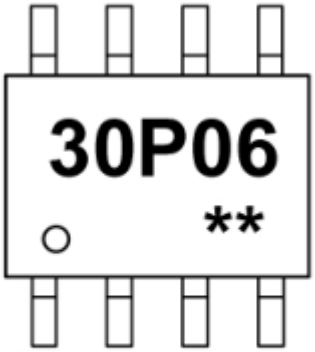
Circuit diagram



Marking



30P06 =Device Code
** =Week Code

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	-16	A
Drain Current-Pulsed [1]	I_{DM}	-64	A
Maximum Power Dissipation	P_D	3.5	W
Thermal Resistance,Junction-to-Ambient [2]	$R_{\theta JA}$	36	℃/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-30V, V_{GS} = 0V			-1	uA
Gate-Source Leakage	I_{GSS}	V_{GS} =±20V, V_{DS} =0V			±100	uA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.5	-2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-15A		6.4	8	mΩ
		V_{GS} =-4.5V, I_D =-10A		8.3	13	
		V_{DS} =-10V, I_D =-15A	30			
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		3500		pF
Output Capacitance	C_{oss}			486		
Reverse Transfer Capacitance	C_{rss}			340		
Switching Characteristics						
Turn-on Delay Time	$T_{d(on)}$	V_{DD} =-15V, , I_D=-10A V_{GS}=-10V, R_{GEN}=3Ω		20		nS
Turn-on Rise Time	T_r			13		
Turn-off Delay Time	$T_{d(off)}$			55		
Turn-off Fall Time	T_f			21		
Total Gate Charge	Q_g	V_{DS}=-15V, I_D=-10A , V_{GS}=-10V		65		nC
Gate-Source Charge	Q_{gs}			12		
Gate-Drain Charge	Q_{gd}			14		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=-15A			-1.2	V

Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

Typical Characteristics

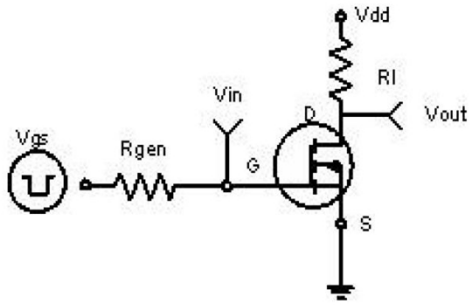


Figure 1 Switching Test Circuit

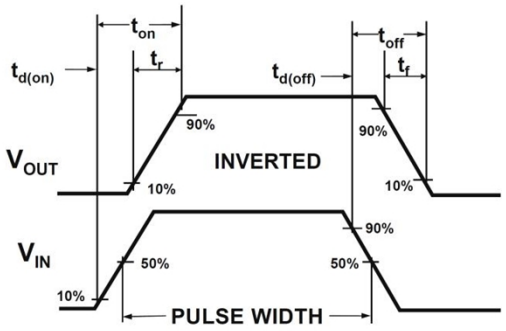


Figure 2 Switching Waveforms

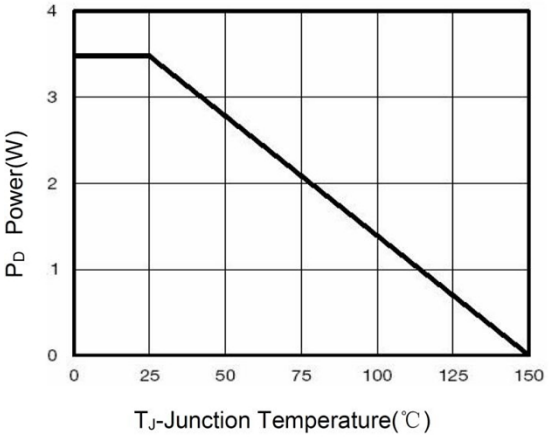


Figure 3 Power Dissipation

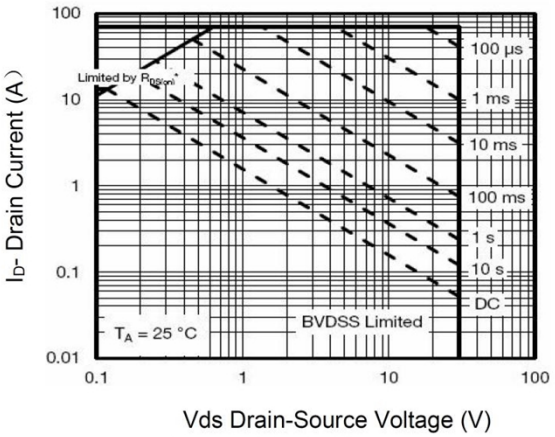


Figure 4 Safe Operation Area

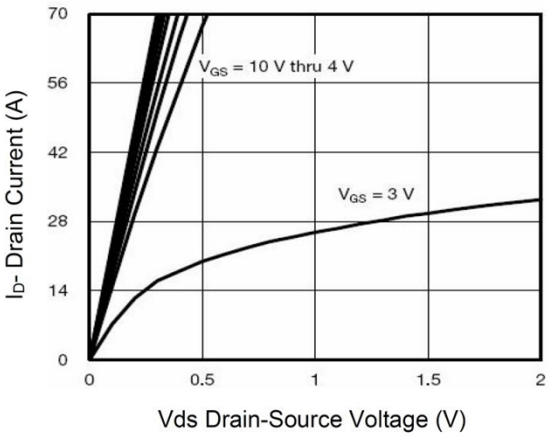


Figure 5 Output Characteristics

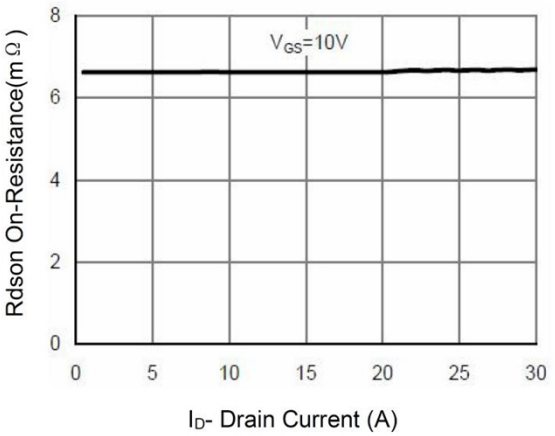


Figure 6 Drain-Source On-Resistance

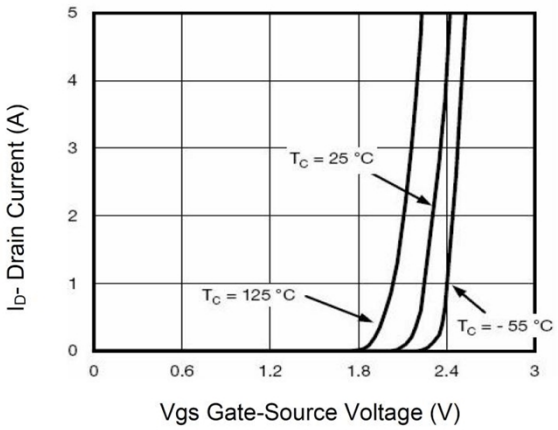


Figure 7 Transfer Characteristics

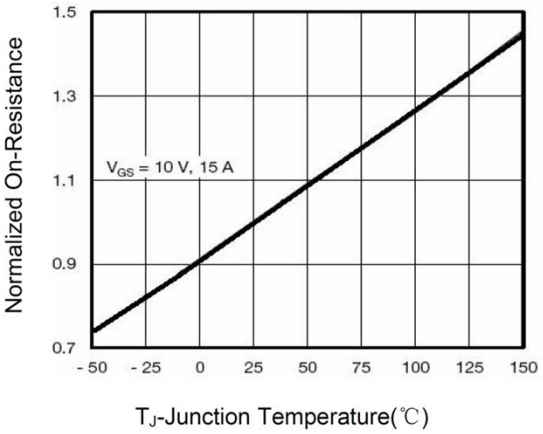


Figure 8 Drain-Source On-Resistance

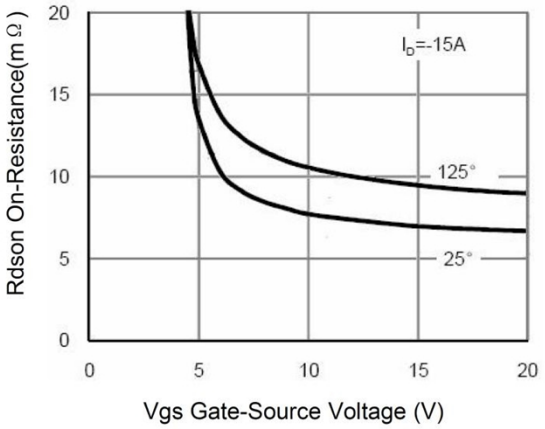


Figure 9 Rdson vs Vgs

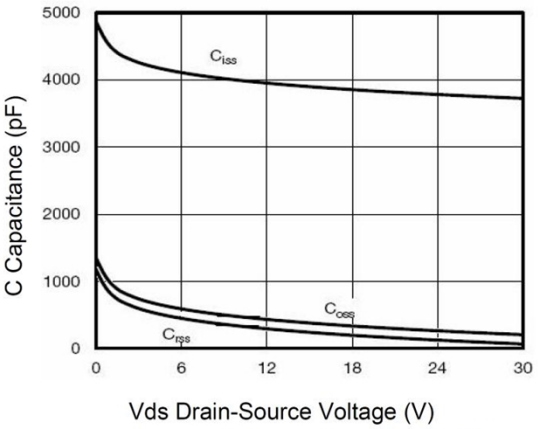


Figure 10 Capacitance vs Vds

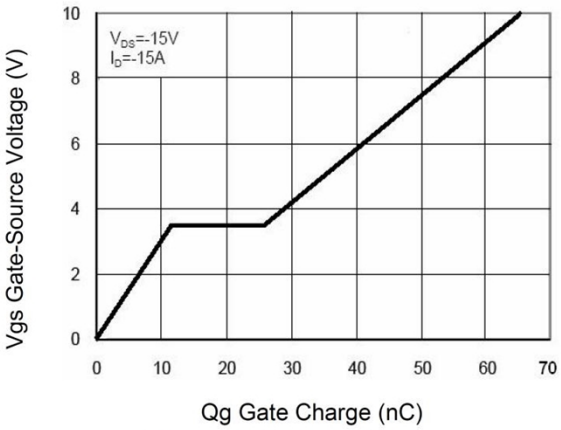


Figure 11 Gate Charge

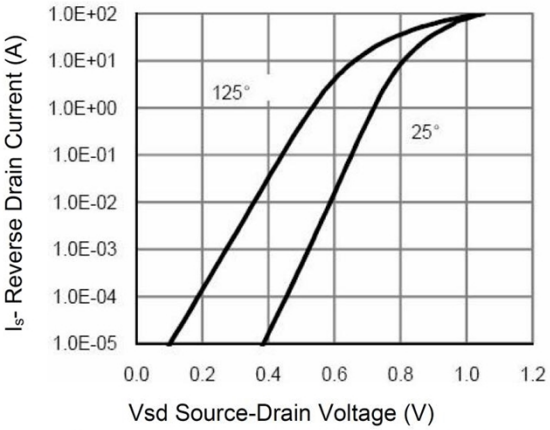


Figure 12 Source- Drain Diode Forward

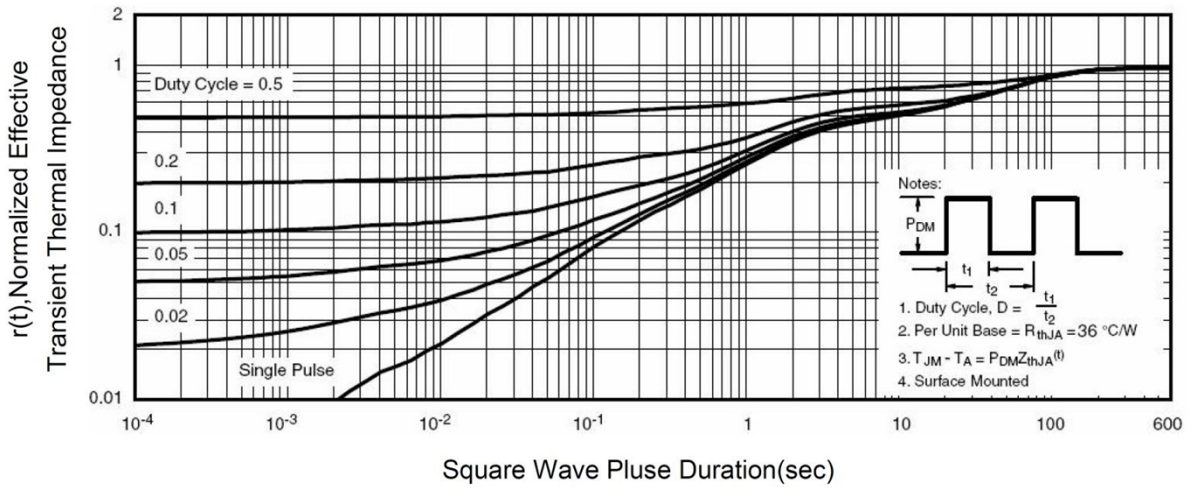
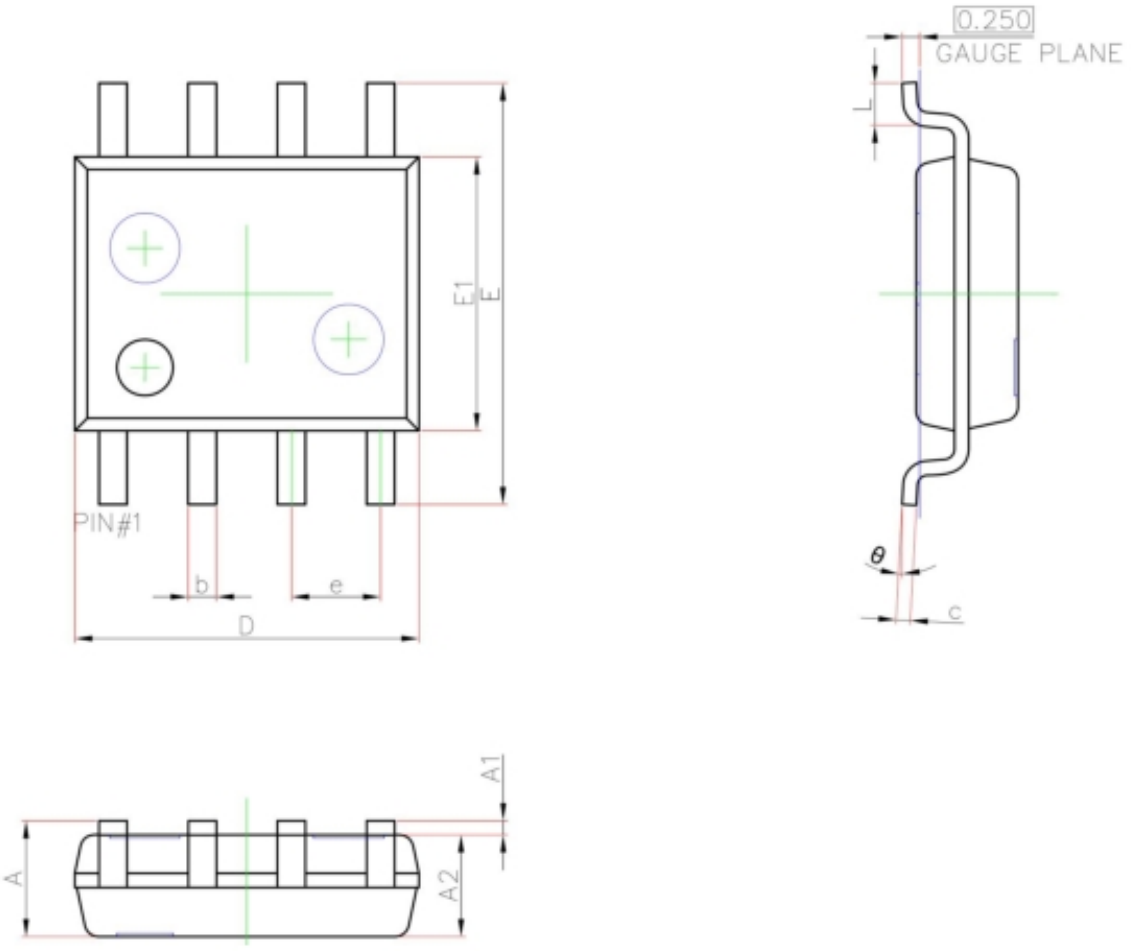


Figure 13 Normalized Maximum Transient Thermal Impedance

SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.450	1.750	0.057	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	4.700	5.100	0.185	0.201
E	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°