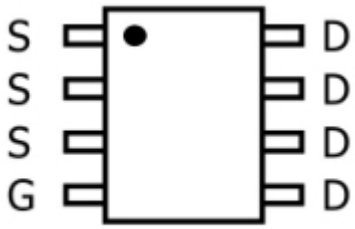
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	3.5mΩ@-10V	-25A
	5mΩ@-4.5V	

Feature

- High Power and current handing capability
- Low on-resistance $R_{DS(on)}$
- Pb-free lead plating; RoHS compliant

Package



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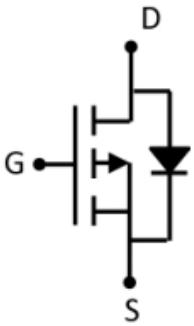
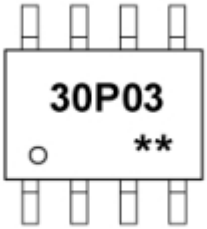
Circuit diagram



Marking



30P03 =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(T_C=25℃)	I_D	-25	A
Drain Current-Pulsed [1]	I_{DM}	-100	A
Single Pulse Avalanche Energy[2]	E_{AS}	259	mJ
Maximum Power Dissipation(T_C=25℃)	P_D	3.5	W
Thermal Resistance,Junction-to-Case	$R_{\theta JC}$	35.71	℃/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	℃

Electrical characteristics

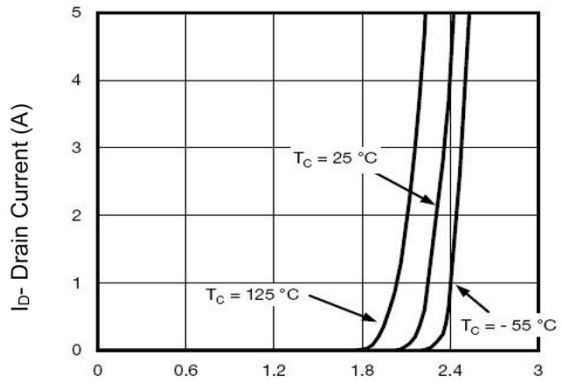
(T_A=25℃, unless otherwise noted)

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} =-24V, 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	-1.7	-2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-20A	-	3.5	4.4	mΩ
		V_{GS} =-4.5V, I_D =-20A	-	5	6.5	
		V_{DS} =-10V, I_D =-15A	30	-	-	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		7034		pF
Output Capacitance	C_{oss}			823		
Reverse Transfer Capacitance	C_{rss}			515		
Switching Characteristics						
Turn-on Delay Time	$T_{d(on)}$	V_{DD} =-15V, I_D=20A, V_{GS}=-10V, R_{GEN}=3Ω		14		nS
Turn-on Rise Time	T_r			13.5		
Turn-off Delay Time	$T_{d(off)}$			66		
Turn-off Fall Time	T_f			36		
Total Gate Charge	Q_g	V_{DD}=-15V , I_D=-20A, V_{GS}=-10V		131		nC
Gate-Source Charge	Q_{gs}			11		
Gate-Drain Charge	Q_{gd}			30		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=-2A			-1.2	V

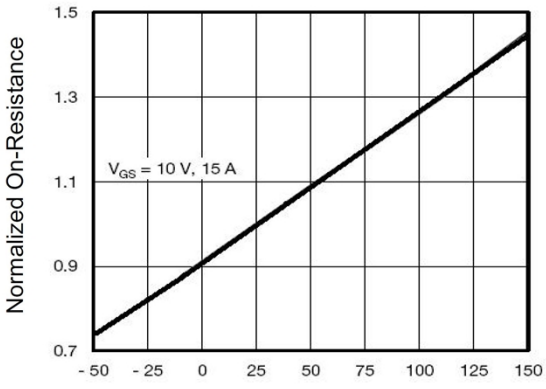
Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. E_{AS} data shows Max. rating . The test condition is V_{DD}=-15V,V_{GS}=-10V,L=0.5mH
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

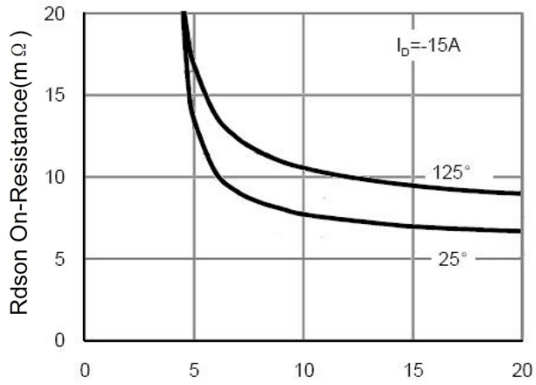
Typical Characteristics



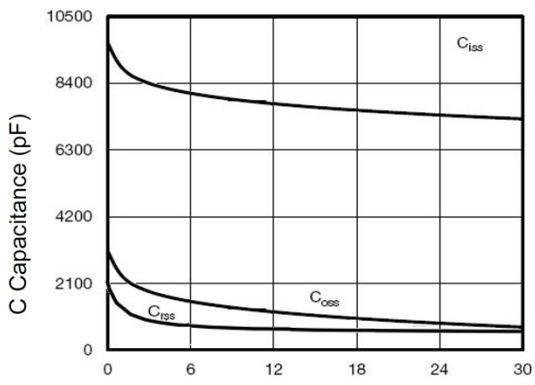
Transfer Characteristics



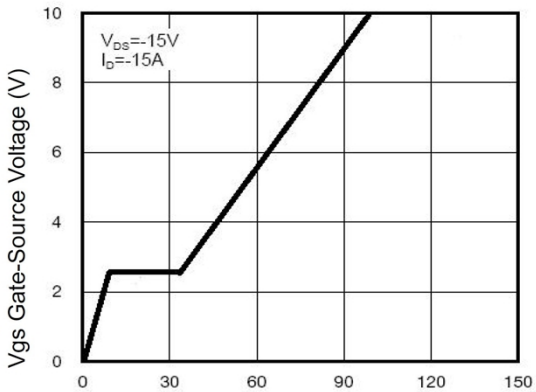
Drain-Source On-Resistance



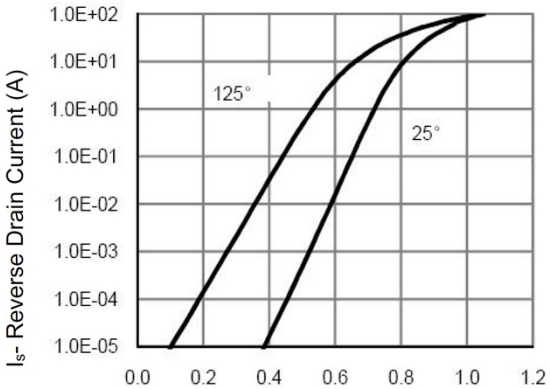
Rdson vs Vgs



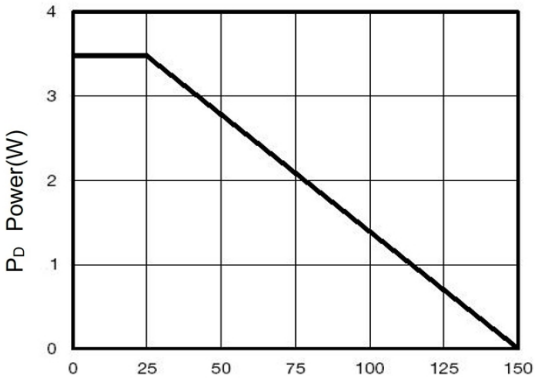
Capacitance vs Vds



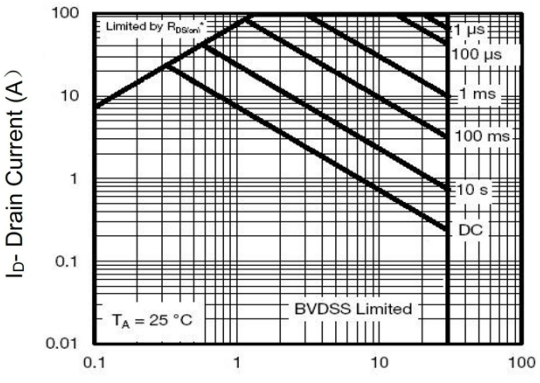
Gate Charge



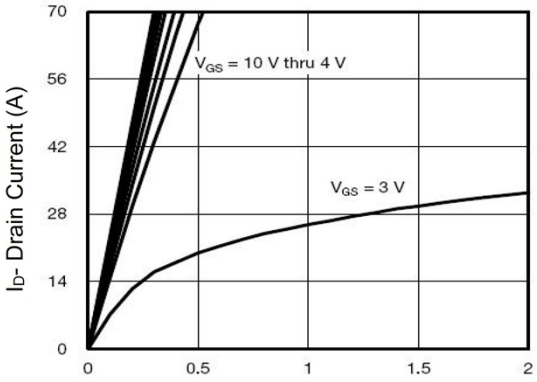
Source- Drain Diode Forward



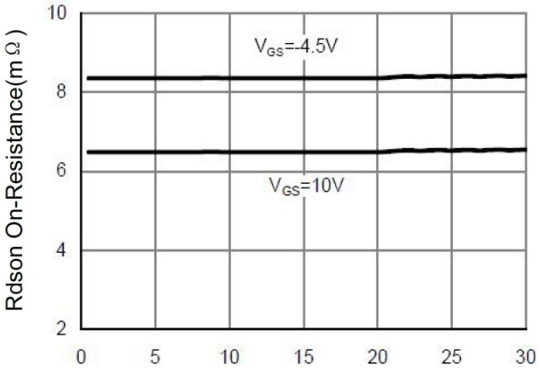
Power Dissipation



Safe Operation Area

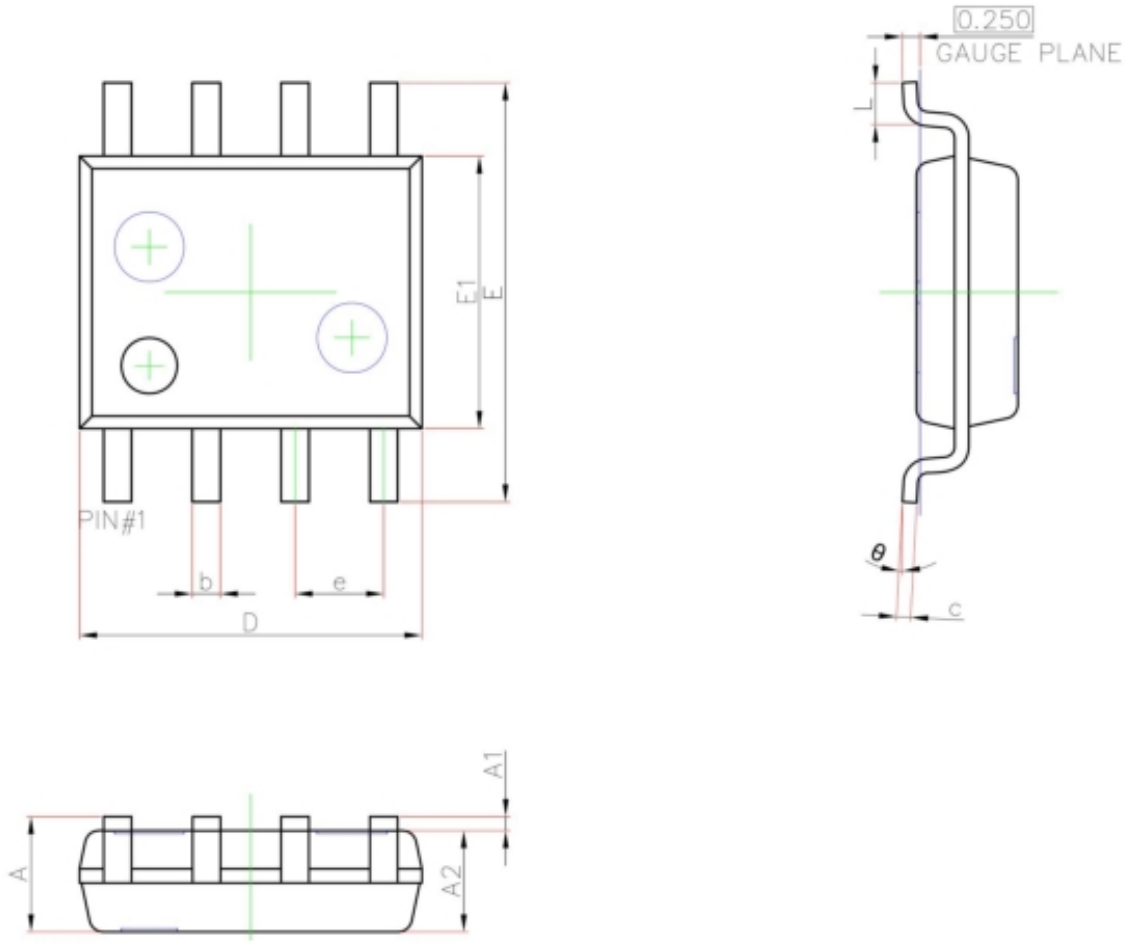


Output Characteristics



Drain-Source On-Resistance

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°