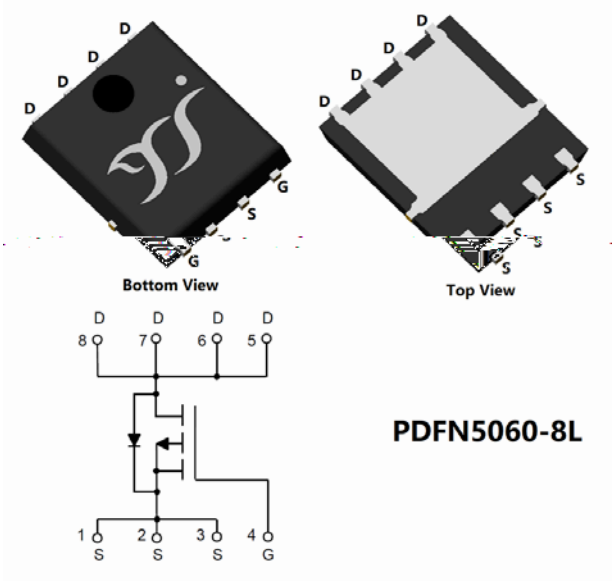
RoHS
COMPLIANT



$_{DS(ON)}$(at V_{GS}=-4.5V) 19mΩ

- 100% EAS Tested
- 100% V_{DS} Tested

- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free
- Part no. with suffix ”Q” means AEC-Q101 qualified

- Power switching application
- Uninterruptible power supply

■

		I_D	-8	A
	T_A=100		-5	
	T_C=25		-50	
	T_C =100		-31	
Pulsed Drain Current [A]		I_{DM}	-200	A
Avalanche energy [B]		EAS	225	mJ
Total Power Dissipation [C]	T_A=25	P_D	2.2	W
	T_A=100		0.9	
	T_C=25		83	
	T_C =100		33	
Junction and Storage Temperature Range		T_J ,T_{STG}	-55 +150	

■

Thermal Resistance Junction-to-Ambient [D]	Steady-State	$R_{\theta JA}$	45	55	/W
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$	1.2	1.5	

■ (Example)

YJG50P04AJQ	F1	YJG50P04AJ	5000	10000	100000	13“ reel

■ (T_J=25 unless otherwise noted)

Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=-250μA	-40	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-40V, V_{GS}=0V	-	-	-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=-250μA	-1	-1.4	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-20A	-	10	13	mΩ
		VGS =-4.5V, ID =-20A		13	19	mΩ
Diode Forward Voltage	V_{SD}	I_S=-20A, V_{GS}=0V	-	-0.86	-1.2	V
Gate resistance	R_G	f=1MHz	-	9	-	Ω
Maximum Body-Diode Continuous Current	I_S		-	-	-50	A
Input Capacitance	C_{iss}	V_{DS}=-25V, V_{GS}=0V, f=1MHz	-	3300	-	pF
Output Capacitance	C_{oss}		-	300	-	
Reverse Transfer Capacitance	C_{rss}		-	225	-	
Total Gate Charge	Q_g	V_{GS}=-10V, V_{DS}=-20V, I_D=-25A	-	73	-	nC
Gate-Source Charge	Q_{gs}		-	8.9	-	
Gate-Drain Charge	Q_{gd}		-	15.3	-	
Reverse Recovery Charge	Q_{rr}	I_F=-25A, di/dt=100A/us	-	12.8	-	nC
Reverse Recovery Time	t_{rr}		-	25.4	-	ns
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=-10V, V_{DD}=-20V, I_D=-25A R_{GEN}=6Ω	-	13.6	-	ns
Turn-on Rise Time	t_r		-	11.8	-	
Turn-off Delay Time	$t_{D(off)}$		-	201.5	-	
Turn-off fall Time	t_f		-	92.5	-	

A. Repetitive rating; pulse width limited by max. junction temperature.
B. T_J=25 , V_{DD}=-30V, V_G=-10V , L=2mH, IAS=-15A.
C. P_d is based on max. junction temperature, using junction-case thermal resistance.
D. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz. Copper, in the still air environment with T_A =25 . The maximum allowed junction temperature of 150 . The value in any given application depends on the user's specific board design.

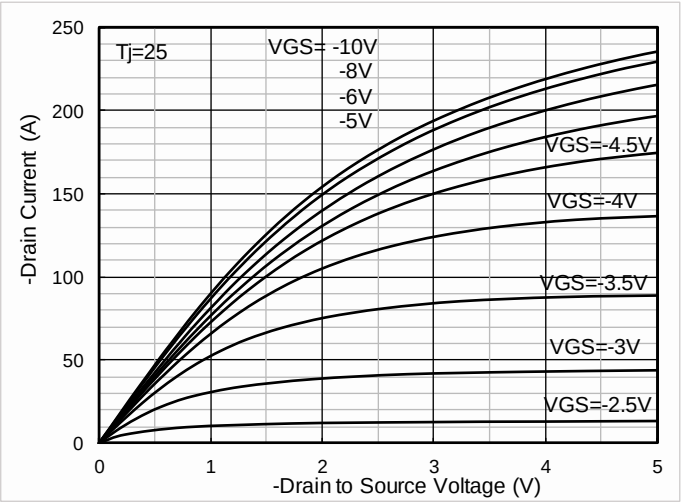


Figure 1. Output Characteristics

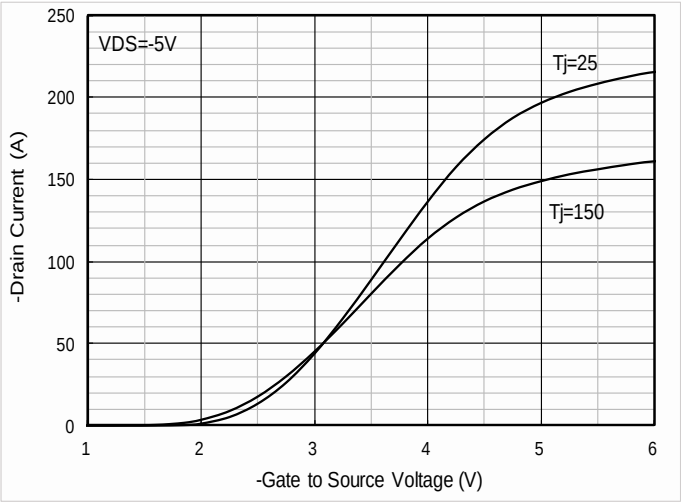


Figure 2. Transfer Characteristics

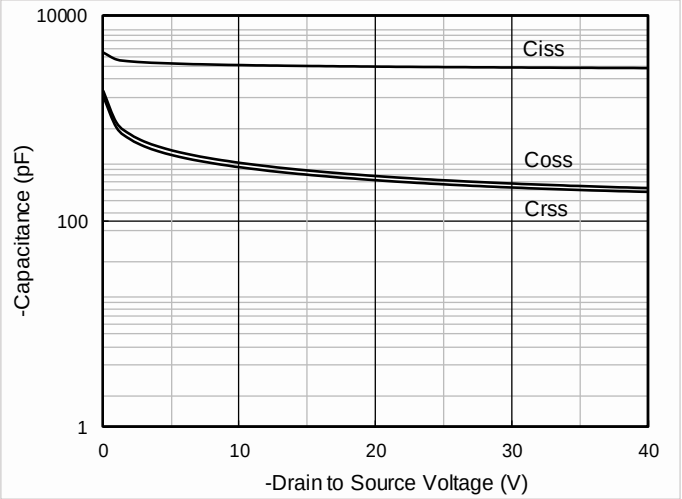


Figure 3. Capacitance Characteristics

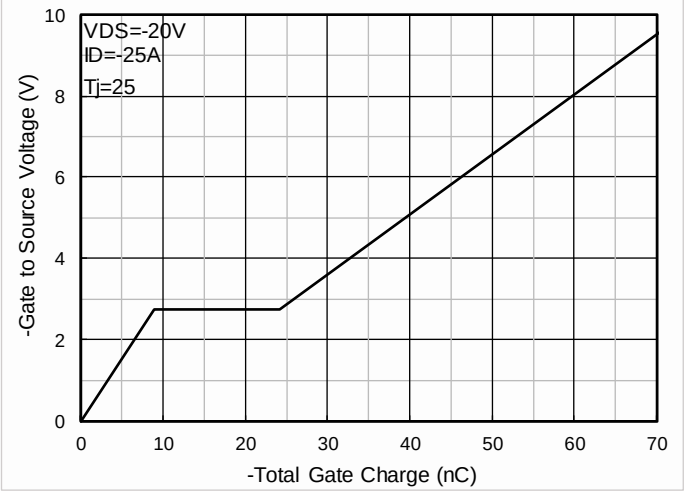


Figure 4. Gate Charge

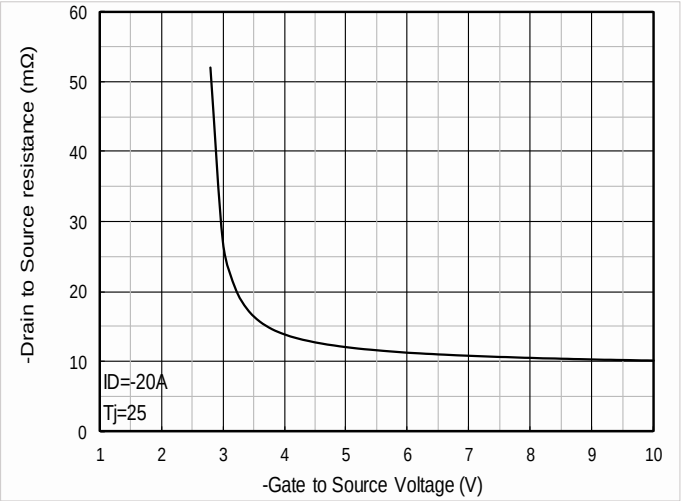


Figure 5. On-Resistance vs Gate to Source Voltage

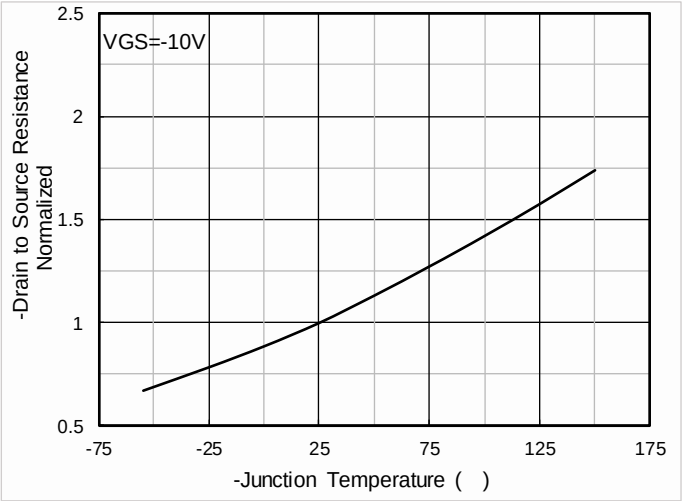


Figure 6. Normalized On-Resistance

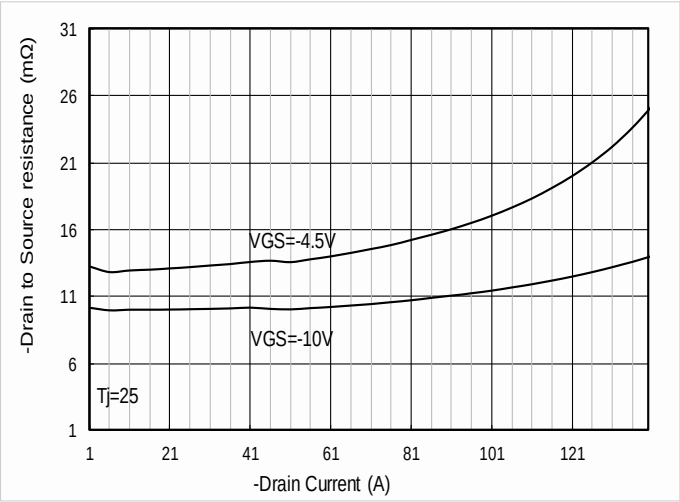


Figure 7. $R_{DS(on)}$ VS Drain Current

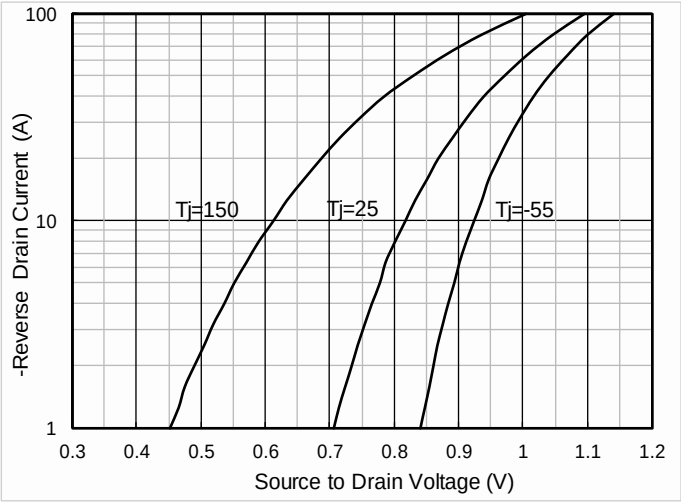


Figure 8. Forward characteristics of reverse diode

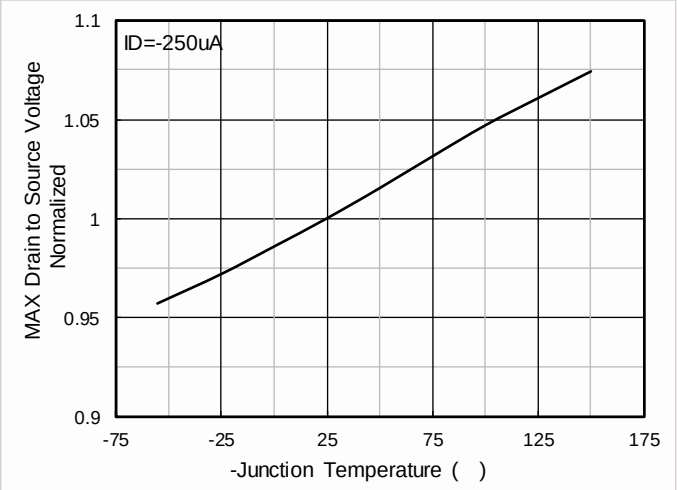


Figure 9. Normalized breakdown voltage

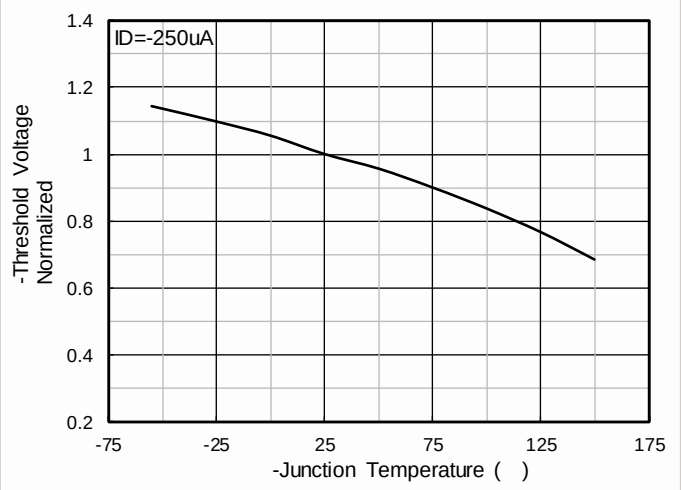


Figure 10. Normalized Threshold voltage

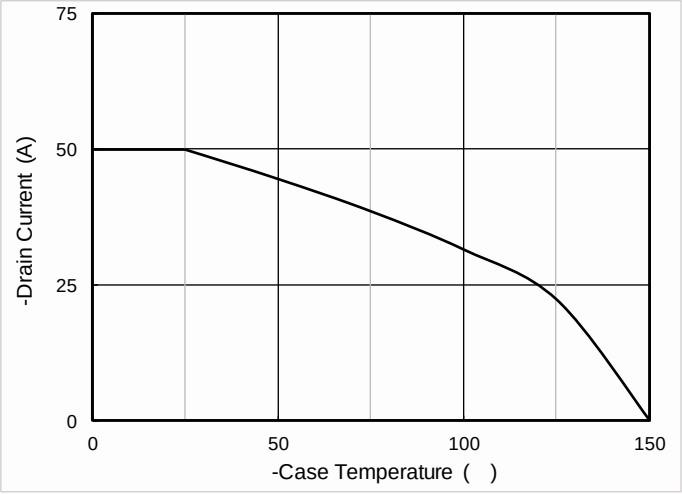


Figure 11. Current dissipation

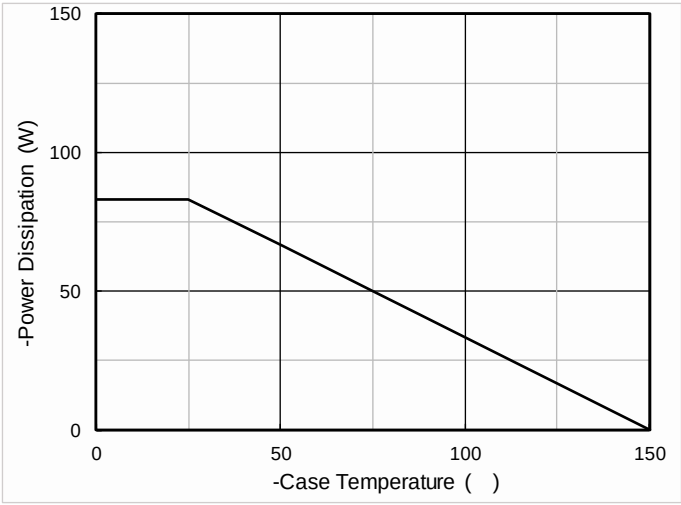


Figure 12. Power dissipation

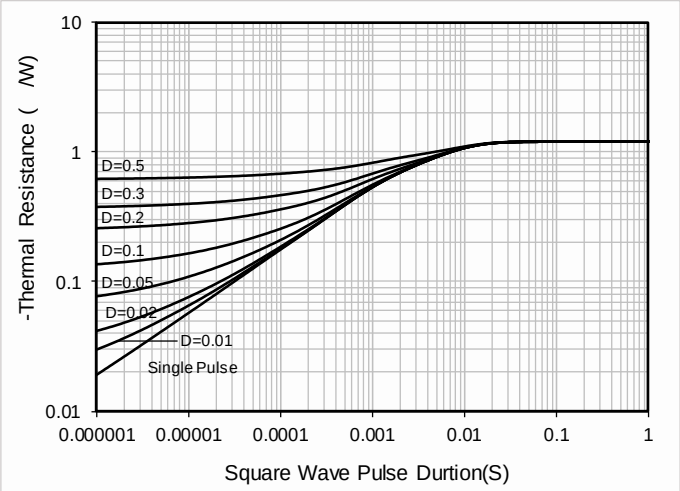


Figure 13. Maximum Transient Thermal Impedance

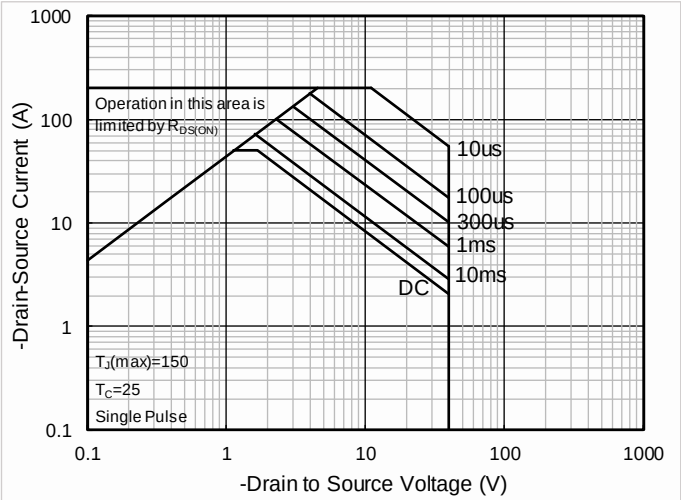
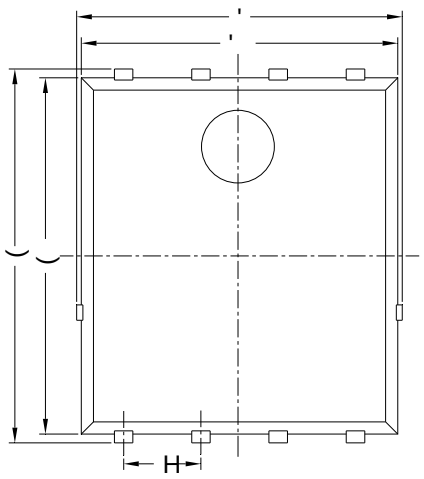
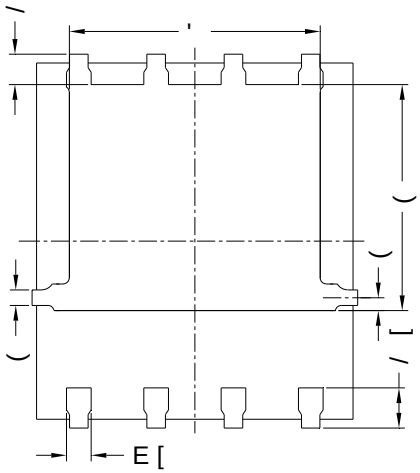


Figure 14. Safe Operation Area

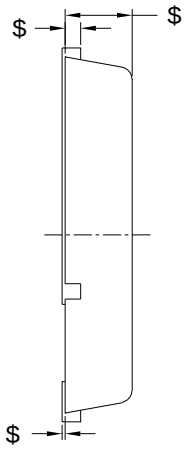
v 3 ') 1 / 0 0 D3FNDJH LQIRUPDWLRQ



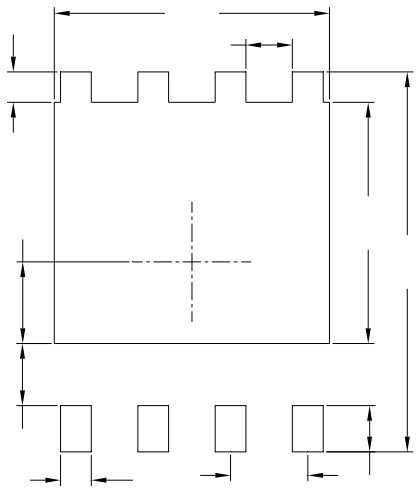
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