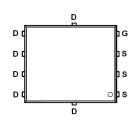
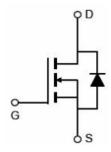


Main Product Characteristics:

V _{DSS}	60V					
R _{DS} (on)	5.4mΩ (typ.)					
I _D	80A					







PDFN 5x6-8L

Pin Assignments

Schematic Diagram

Features and Benefits:

- Advanced MOSFET process technology
- Special designed for PWM, load switching and general purpose applications
- Ultra low on-resistance with low gate charge
- Fast switching and reverse body recovery
- 150°C operating temperature



Description:

It utilizes the latest processing techniques to achieve the high cell density and reduces the on-resistance with high repetitive avalanche rating. These features combine to make this design an extremely efficient and reliable device for use in power switching application and a wide variety of other applications.

Absolute Max Rating:

Symbol	Parameter	Max.	Units	
I _D @ TC = 25°C	Continuous Drain Current, V _{GS} @ 10V ①	80		
I _{DM}	Pulsed Drain Current ②	320	Α	
P _D @TC = 25°C	Power Dissipation ③	108	W	
V _{DS}	Drain-Source Voltage	60	V	
V _{GS}	Gate-to-Source Voltage	± 20	V	
E _{AS}	Single Pulse Avalanche Energy @ L=0.3mH	184	mJ	
I _{AS}	Avalanche Current @L=0.3mH	35	Α	
T _J T _{STG}	Operating Junction and Storage Temperature Range	-55 to +150	°C	



Thermal Resistance

Symbol	Characterizes	Тур.	Max.	Units
Rejc	Junction-to-case ③	_	1.4	°C/W
ReJA	Junction-to-Ambient ④	_	92	°C/W

Electrical Characterizes @T_A=25℃ unless otherwise specified

Symbol	Parameter	Min.	Тур.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source breakdown voltage	60	_	_	V	$V_{GS} = 0V, I_D = 250\mu A$
R _{DS(on)}	Static Drain-to-Source on-resistance	_	5.4	8	mΩ	V _{GS} =10V,I _D =30A
$V_{GS(th)}$	Gate threshold voltage	2	_	4	V	$V_{DS} = V_{GS}, I_{D} = 250 \mu A$
I _{DSS}	Drain-to-Source leakage current	_	_	1	μA	V _{DS} =60V,V _{GS} = 0V
1	Cata ta Sauraa famuard la akaga	_	_	100	A	V _{GS} =20V
I _{GSS}	Gate-to-Source forward leakage	_	_	-100	nA	V _{GS} = -20V
Qg	Total gate charge	_	89	_	nC	$I_D = 30A,$ $V_{DS} = 30V,$
Q _{gs}	Gate-to-Source charge	_	8	_		
Q _{gd}	Gate-to-Drain("Miller") charge	_	16	_		V _{GS} = 10V
t _{d(on)}	Turn-on delay time	_	18.3	_		V_{GS} =10V, V_{DS} =33V, R_{GEN} =2.2 Ω
tr	Rise time	_	33.5	_	ns	
t _{d(off)}	Turn-Off delay time	_	37.5	_		
t _f	Fall time	_	9.7	_		
C _{iss}	Input capacitance	_	4040	_	pF	V _{GS} = 0V V _{DS} = 50V
Coss	Output capacitance	_	223	_		
C _{rss}	Reverse transfer capacitance	_	199	_		f = 1MHz

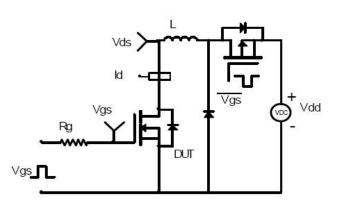
Source-Drain Ratings and Characteristics

Symbol	Parameter	Min.	Тур.	Max.	Units	Conditions	
Is	Continuous Source Current (Body Diode)	_	_	80	А	MOSFET symbol showing the	
I _{SM}	Pulsed Source Current (Body Diode)	_	_	320	А	integral reverse p-n junction diode.	
V_{SD}	Diode Forward Voltage	_	_	1.2	V	I _S =30A, V _{GS} =0V	
trr	Reverse Recovery Time	_	32	_	ns	I _s =30A,di/dt=100A/us	
Qrr	Reverse Recovery Charge	_	45	_	nC		

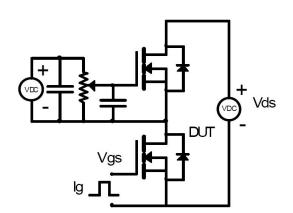


Test Circuits and Waveforms

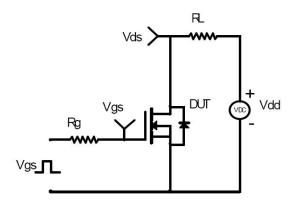
EAS Test Circuit:



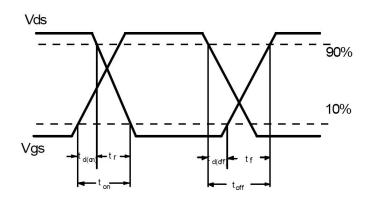
Gate Charge Test Circuit:



Switching Time Test Circuit:



Switching Waveforms:



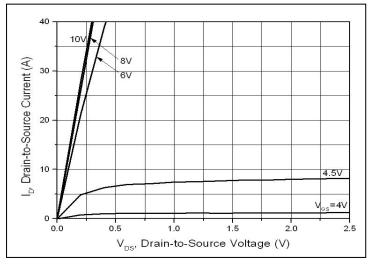
Version: 1.3

Notes:

- ①Calculated continuous current based on maximum allowable junction temperature.
- ②Repetitive rating; pulse width limited by max. junction temperature.
- ③The power dissipation PD is based on max. junction temperature, using junction-to-case thermal resistance.
- 4The value of $R_{\texttt{9JA}}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with TA =25°C



Typical Electrical and Thermal Characteristics



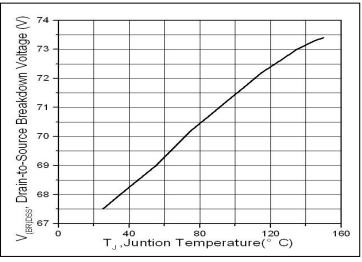
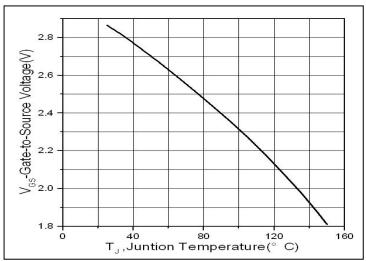


Figure 1. Typical Output Characteristics

Figure 2. Drain-to-Source Breakdown Voltage vs. Temperature



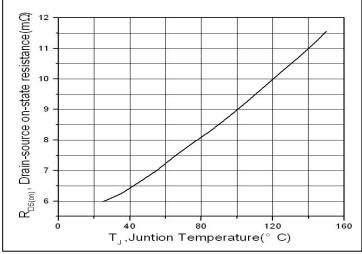
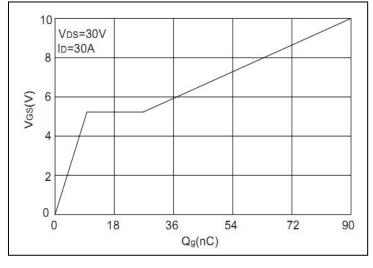


Figure3.Gate to Source Cut-off Voltage

Figure 4. Normalized On-Resistance vs. Junction Temperature



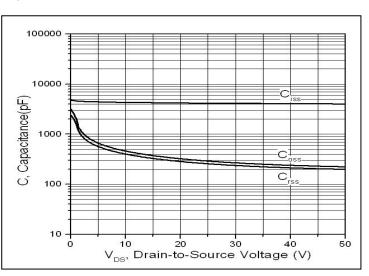
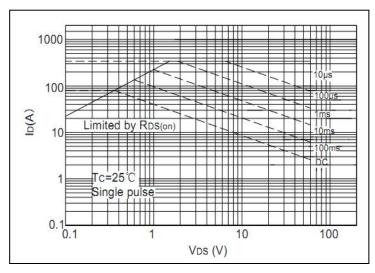


Figure 5. Gate Charge

Figure6. Capacitance



Typical Electrical and Thermal Characteristics



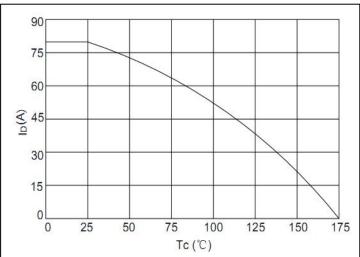


Figure 7. Safe Operating Area

Figure 8. Drain Current vs. Case Temperature

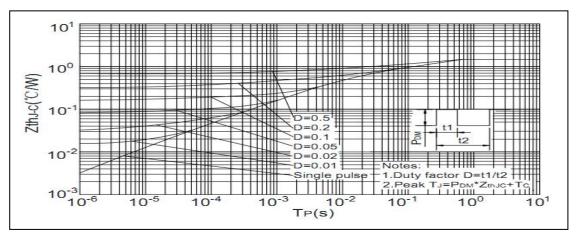
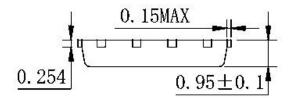


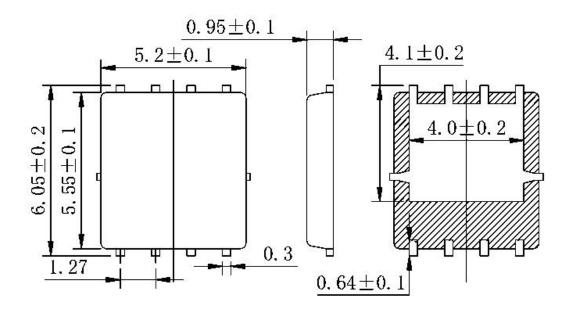
Figure 9. Normalized Maximum Transient Thermal Impedance



Mechanical Data:

Unit:mm









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