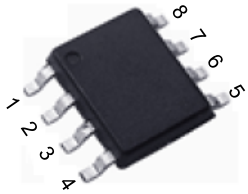
P-Channel -40V (D-S) Power MOSFET

Features

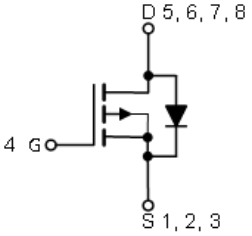
- 100% Avalanche Tested
- Extremely Low Losses with Low FOM Rdson*Qg
- Halogen Free, Pb-Free
- RoHS Compliant



SOP-8

Applications

- DC/DC
- Motors, lamps
- Power switching



Absolute Maximum Ratings (T_J=25°C unless otherwise noted)				
Parameter		**Symbol**	**Value**	**Unit**
Drain Source Voltage		V_{DS}	-40	V
Gate Source Voltage		V_{GS}	±20	V
Drain Current, Continuous V_{GS}=10V *(Note 1)*	T_A=25°C	I_D	-13	A
Drain Current, Pulsed *(Note 2)*		I_{DM}	-52	A
Single Avalanche Energy		E_{AS}	128	mJ
Power Dissipation *(Note 3)*	T_A=25°C	P_D	4	W
Operating Junction/Storage Temperature Range		T_J/T_{STG}	-55 to +150	°C

Note 1: Calculated continuous current based on maximum allowable junction temperature.
Note 2: Repetitive rating; pulse width limited by max. junction temperature.
Note 3:The power dissipation P_D is based on max. junction temperature, using junction-to-case thermal resistance.

Thermal Characteristics			
Parameter	**Symbol**	**Max**	**Unit**
Junction-to-ambient (t ≤ 10s) *(Note 4)*	$R_{\theta JA}$	31.2	°C/W

Note 4:The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

Electrical Characteristics (T_J =25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-40	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-40V, V_{GS}=0V	--	--	-1	uA
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_{DS}=-250uA	-1	--	-2.5	V
Gate Leakage Current	I_{GSS}	V_{GS}=±20V	--	--	±100	nA
Drain-Source On-state Resistance *(Note 4)*	$R_{DS(on)}$	V_{GS}=-10V, I_D=-10A	--	11.6	15	mΩ
		V_{GS}=-4.5V, I_D=-8A	--	15	22	
Total Gate Charge	Q_g	V_{GS}=-4.5V, V_{DS}=-32V, I_D=-10A	--	20	--	nC
Gate-Source Charge	Q_{gs}		--	8	--	
Gate-Drain Charge	Q_{gd}		--	8.5	--	
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=-10V, V_{DS}=-20V, I_D=-20A, R_{GEN}=3Ω	--	21.8	--	ns
Turn-on Rise Time	t_r		--	87.2	--	
Turn-off Delay Time	$t_{d(off)}$		--	49.5	--	
Turn-off Fall Time	t_f		--	54.8	--	
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-25V, f=1MHz	--	3860	--	pF
Output Capacitance	C_{oss}		--	250	--	
Reverse Transfer Capacitance	C_{rss}		--	240	--	

Reverse Diode Characteristics (T_J =25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous Source Current (Body Diode) *(Note 1)*	I_S	T_C=25°C	--	--	-13	A
Pulsed Source Current (Body Diode) *(Note 1)*	I_{SM}	T_C=25°C	--	--	-52	A
Diode Forward Voltage	V_{SD}	I_S=-1A, V_{GS}=0V	--	--	-1.2	V

Typical Characteristics Curves (T_J = 25℃ unless otherwise noted)

Fig.1 - Typical Output Characteristics

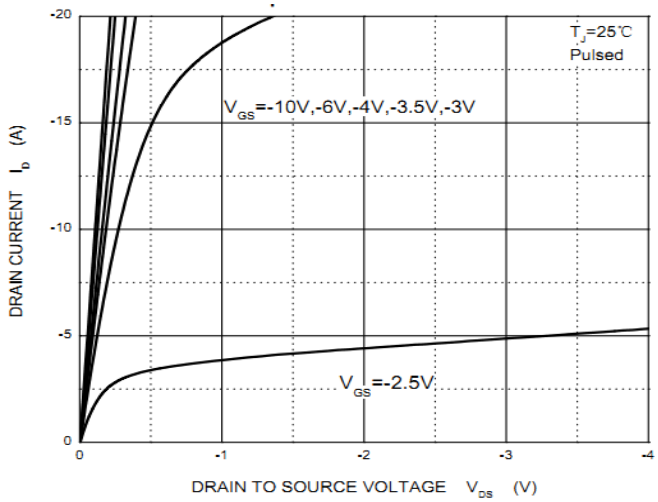


Fig.2 - Normalized VGS(th) vs. Junction Temperature

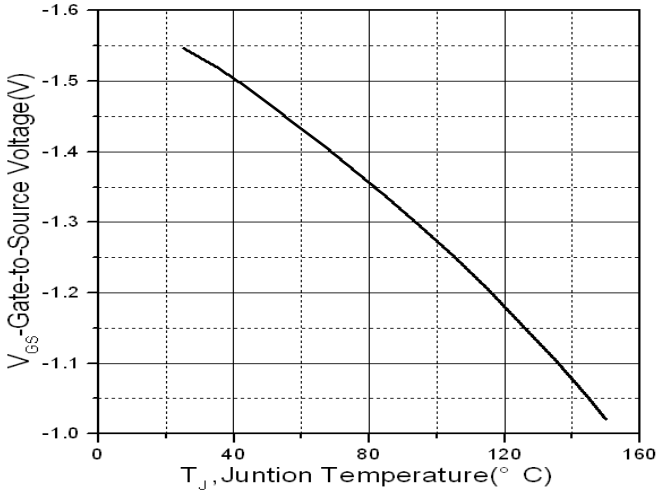


Fig.3 -Normalized On-Resistance vs. Junction Temperature

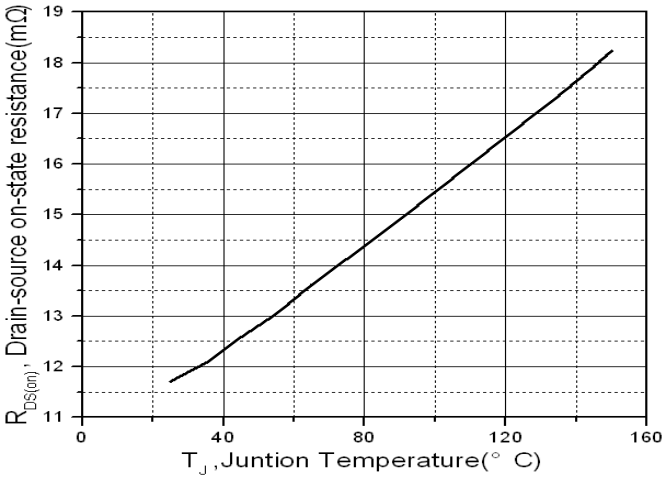


Fig.4 - Drain-to-Source Breakdown Voltage vs. Junction Temperature

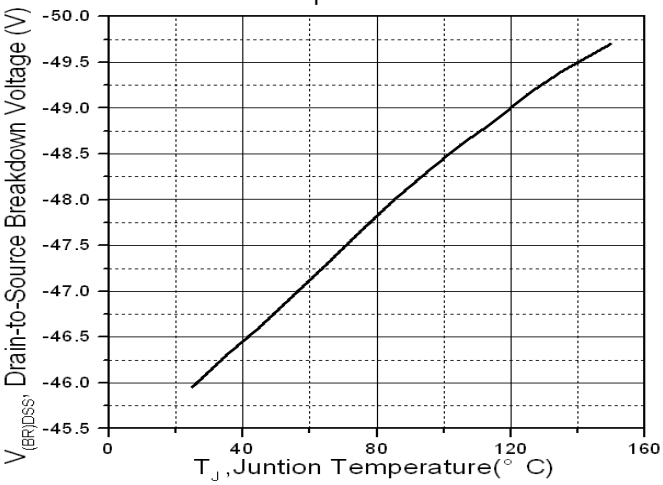


Fig.5 -Capacitance Characteristics

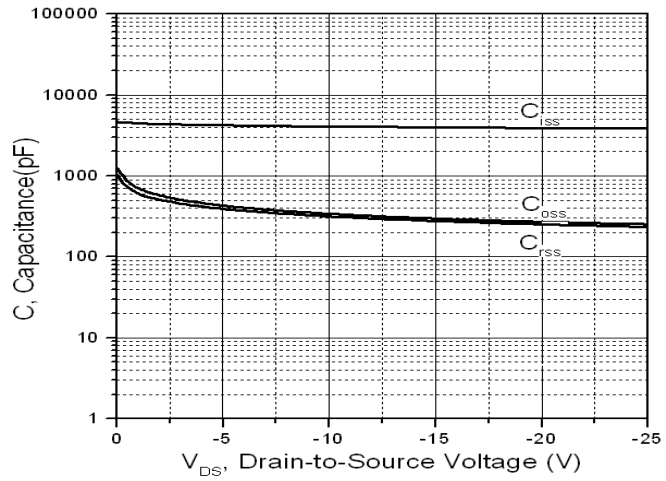
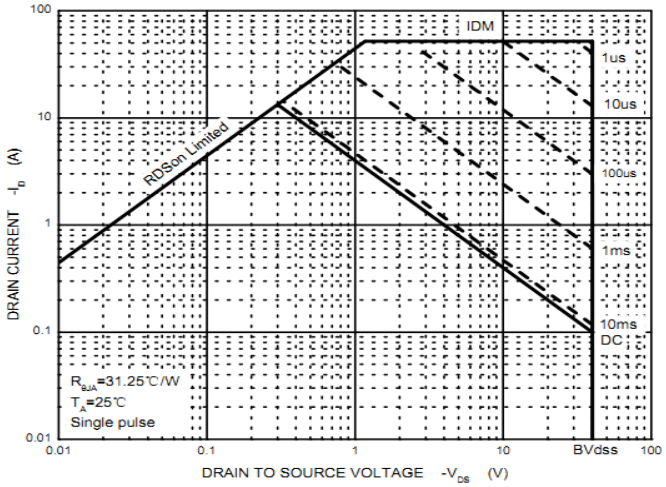
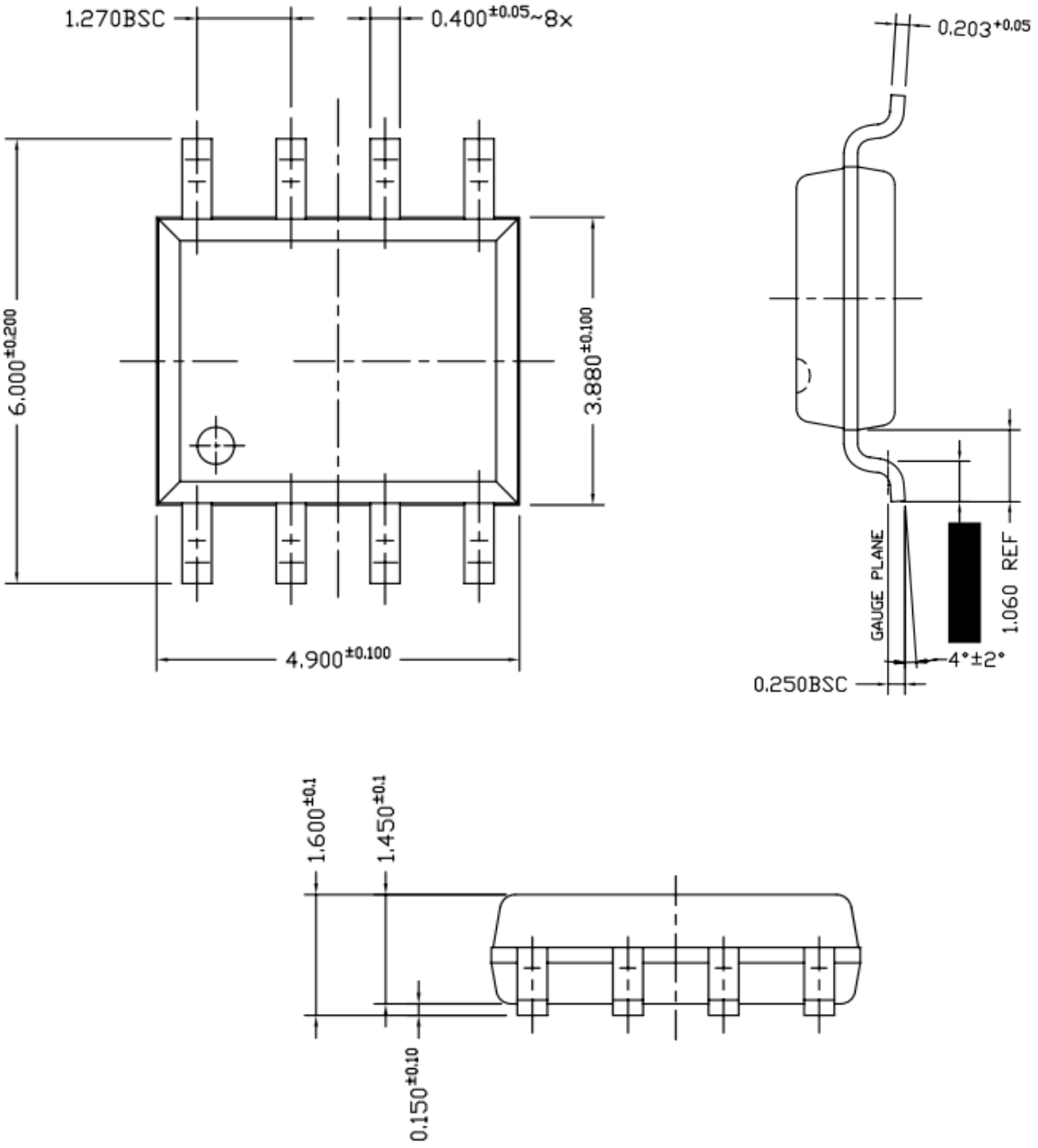


Fig.6 -Safe Operation Area



Package Outline Dimensions (Unit: millimeters)

SOP-8



Disclaimers

These materials are intended as a reference to assist our customers in the selection of the Suzhou Good-Ark product best suited to the customer's application; they do not convey any license under any intellectual property rights, or any other rights, belonging to Suzhou Good-Ark Electronics Co., Ltd.or a third party.

Suzhou Good-Ark Electronics Co., Ltd. assumes no responsibility for any damage, or infringement of any third-party's rights, originating in the use of any product data, diagrams, charts, programs, algorithms, or circuit application examples contained in these materials.

All information contained in these materials, including product data, diagrams, charts, programs and algorithms represents information on products at the time of publication of these materials, and are subject to change by Suzhou Good-Ark Electronics Co., Ltd. without notice due to product improvements or other reasons. It is therefore recommended that customers contact Suzhou Good-Ark Electronics Co., Ltd. or an authorized Suzhou Good-Ark Electronics Co., Ltd. for the latest product information before purchasing a product listed herein. The information described here may contain technical inaccuracies or typographical errors. Suzhou Good-Ark Electronics Co., Ltd. assumes no responsibility for any damage, liability, or other loss rising from these inaccuracies or errors. Please also pay attention to information published by Suzhou Good-Ark Electronics Co., Ltd. by various means, including our website home page.
(http://www.goodark.com)

When using any or all of the information contained in these materials, including product data, diagrams, charts, programs, and algorithms, please be sure to evaluate all information as a total system before making a final decision on the applicability of the information and products. Suzhou Good-Ark Electronics Co., Ltd. assumes no responsibility for any damage, liability or other loss resulting from the information contained herein.

The prior written approval of Suzhou Good-Ark Electronics Co., Ltd. is necessary to reprint or reproduce in whole or in part these materials.

Please contact Suzhou Good-Ark Electronics Co., Ltd. or an authorized distributor for further details on these materials or the products contained herein.