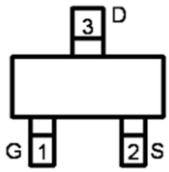
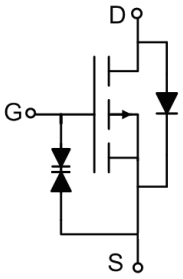
Main Product Characteristics:

V_{DSS}	-20V
R_{DS}(on)	31 (typ.)
I_D	-4A

SOT-23



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 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: @T_A=25 unless otherwise specified

Symbol	Parameter	Max.	Units
I_D @ T_C = 25°C	Continuous Drain Current, V_{GS} @ 10V	-4	A
I_D @ T_C = 70°C	Continuous Drain Current, V_{GS} @ 10V	-2.4	
I_{DM}	Pulsed Drain Current	-30	
P_D @T_C = 25°C	Power Dissipation	1.4	W
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-to-Source Voltage	± 8	V
T_J T_{STG}	Operating Junction and Storage Temperature Range	-55 to +150	°C

Thermal Resistance

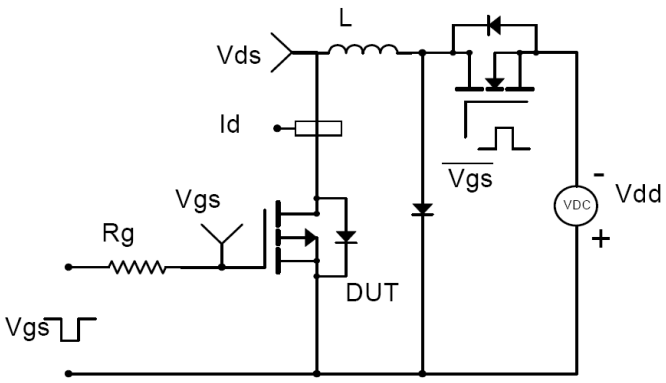
Symbol	Characterizes	Typ.	Max.	Units
R A	Junction-to-		90	°C /W

Electrical Characterizes @T_A=25 unless otherwise specified

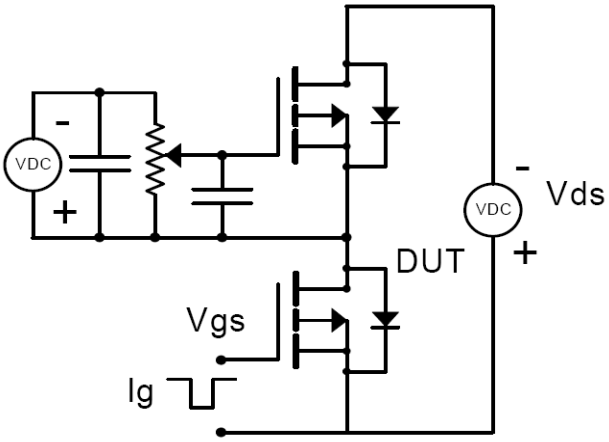
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source breakdown voltage	-20			V	V_{GS} = 0V, I_D = -
$R_{DS(on)}$	Static Drain-to-Source on-resistance		31	38		V_{GS}=-4.5V,I_D = -4A
			37	48		V_{GS}=-2.5V,I_D = -4A
$V_{GS(th)}$	Gate threshold voltage	-0.3		-0.9	V	V_{DS} = V_{GS}, I_D = -
I_{DSS}	Drain-to-Source leakage current			-1		V_{DS} = -20V,V_{GS} = 0V
I_{GSS}	Gate-to-Source forward leakage			10		V_{GS} =8V

Test Circuits and Waveforms

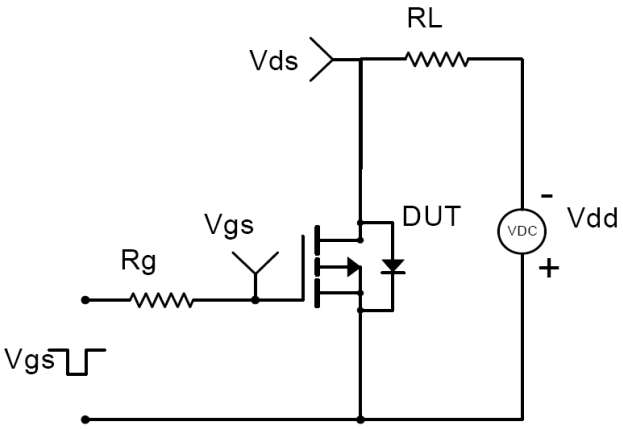
EAS Test Circuit:



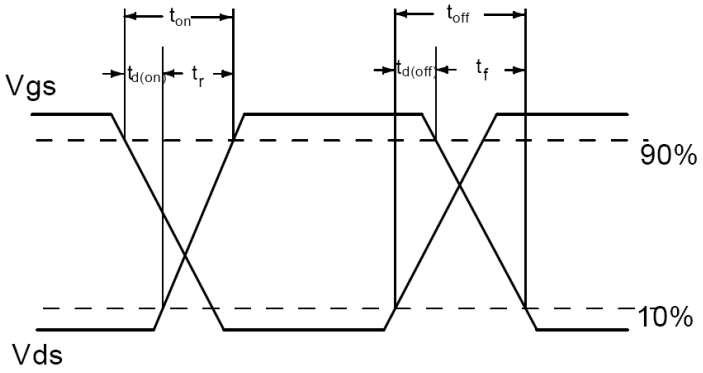
Gate Charge Test Circuit:



Switching Time Test Circuit:



Switch Waveforms:



Notes:

Calculated continuous current based on maximum allowable junction temperature.

Repetitive rating; pulse width limited by max. junction temperature.

The power dissipation PD is based on max. junction temperature, using junction-to-case thermal resistance.

The value of $R_{\theta A}$ 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

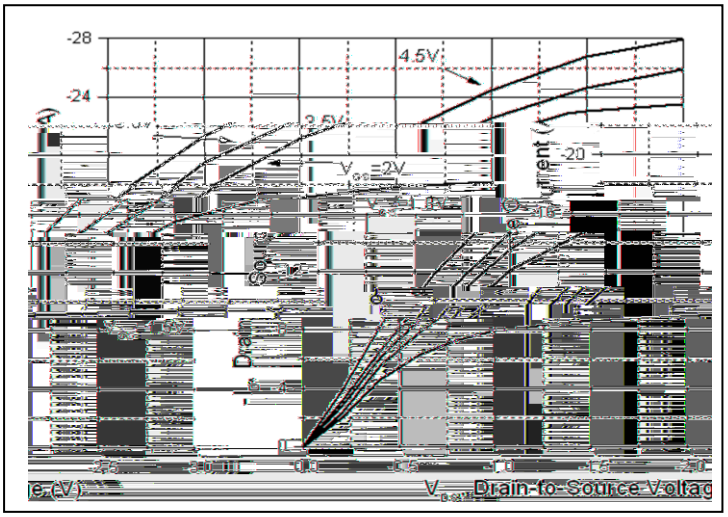


Figure1.Typical Output Characteristics

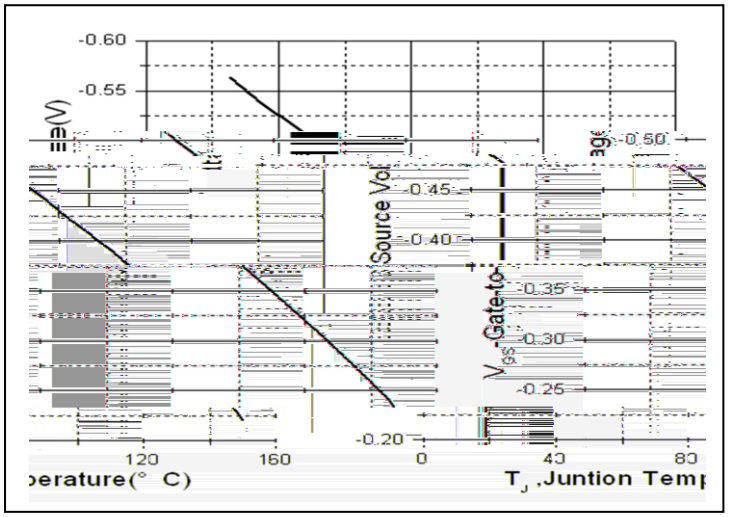


Figure2. Vth vs. Junction Temperature

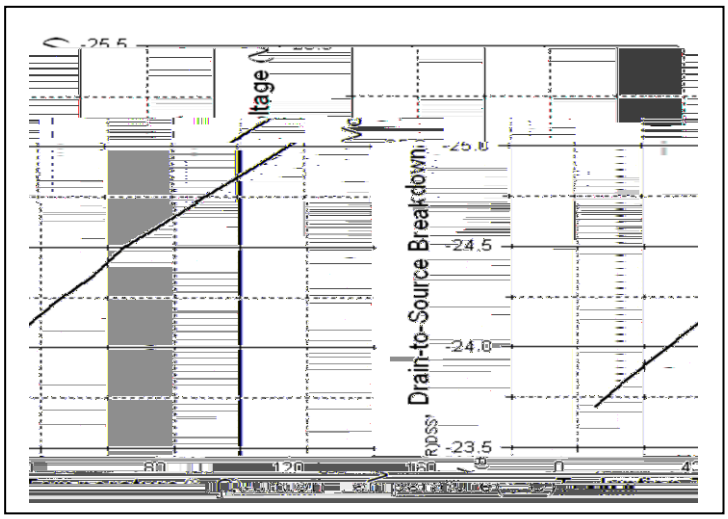


Figure3. Drain-to-Source Breakdown Voltage vs. Junction Temperature

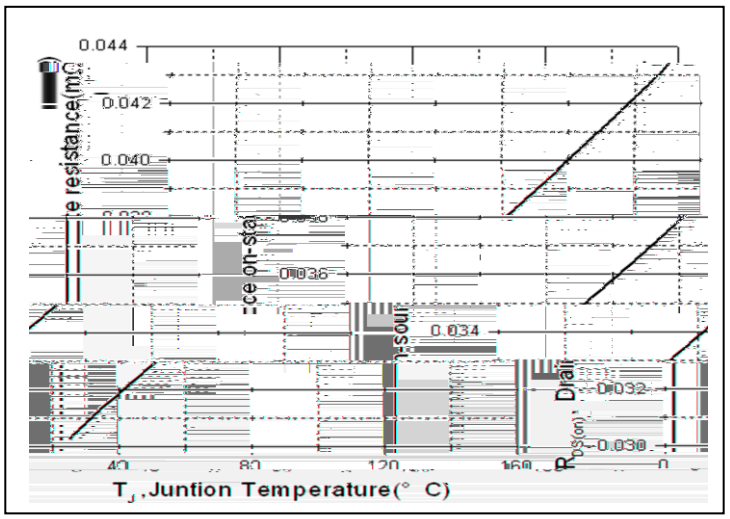


Figure4. $R_{DS(on)}$ vs. Junction Temperature

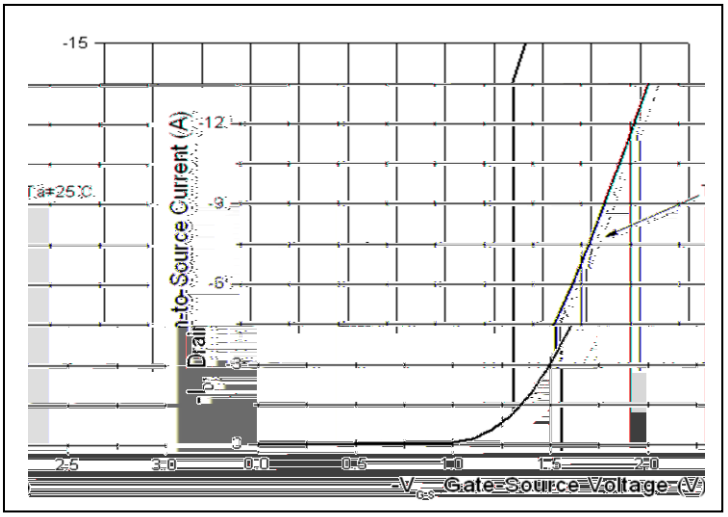


Figure5. Transfer Characteristics

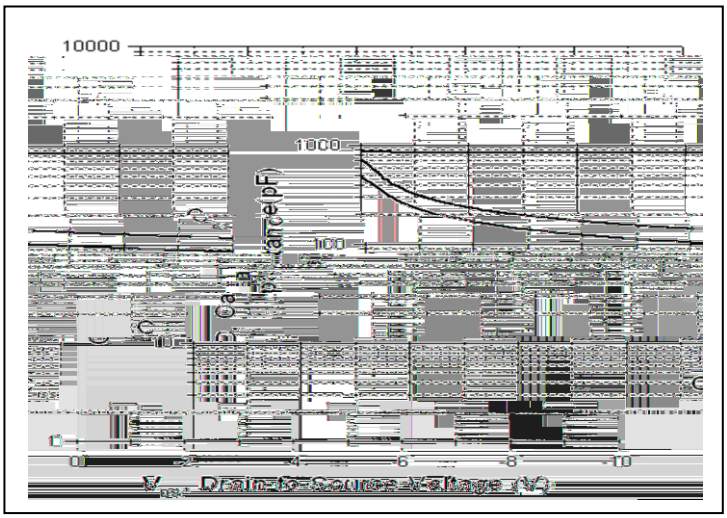


Figure6. Capacitance

Typical Electrical and Thermal Characteristics

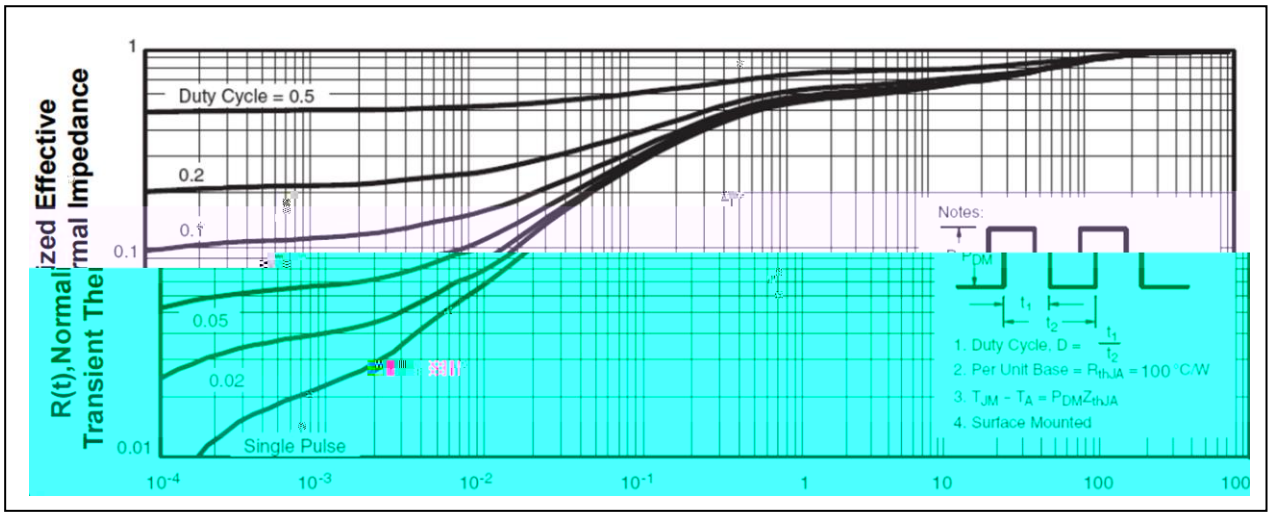
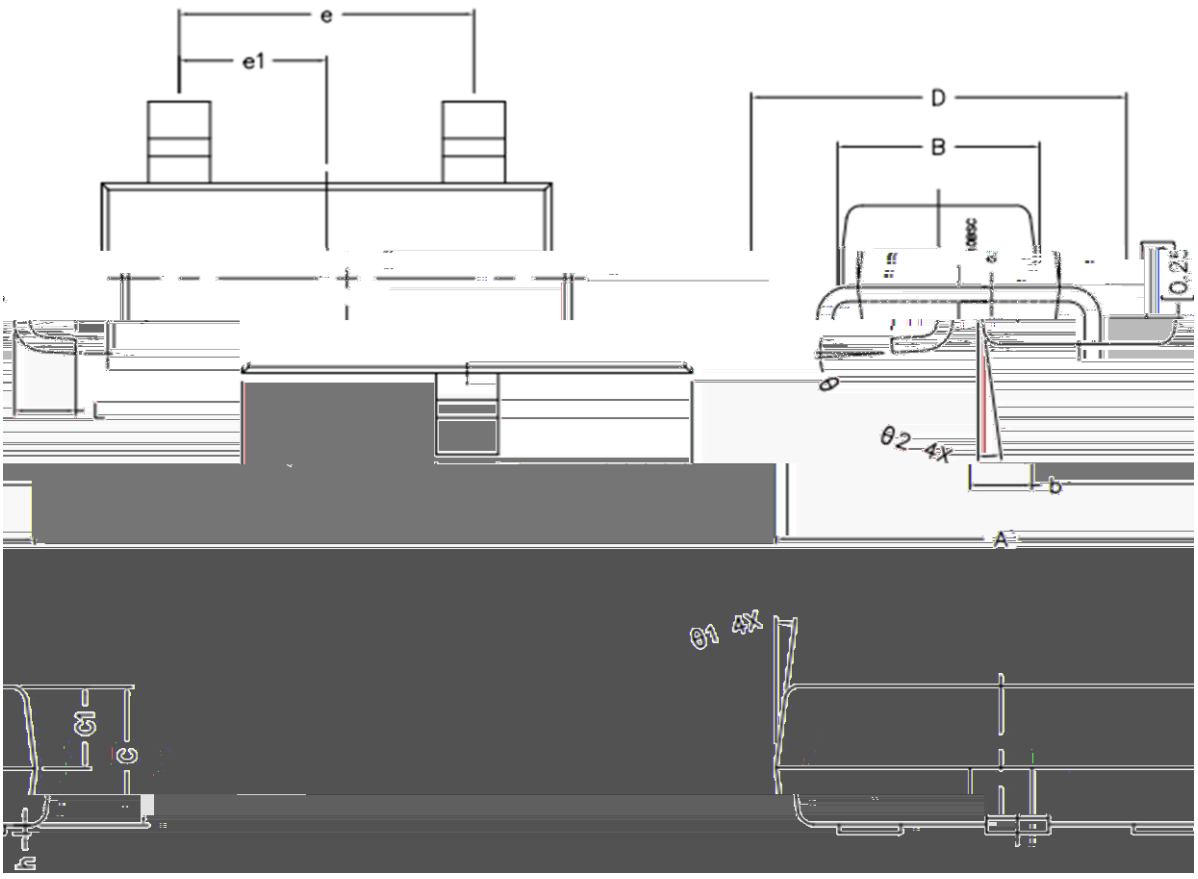
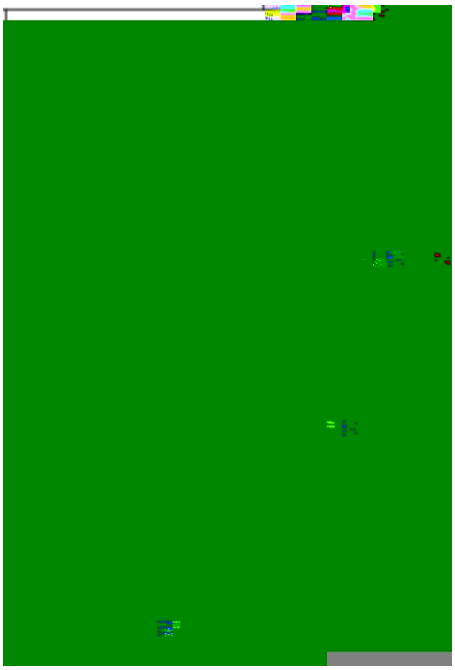


Figure7. Normalized Maximum Transient Thermal Impedance

Mechanical Data





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