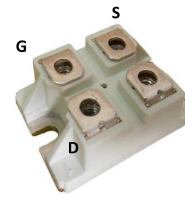


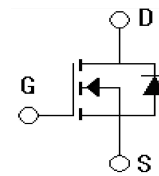
Features

- N-Channel, Low $R_{DS(on)}$
- High Current Handling Capability
- Fast Intrinsic Diode
- Avalanche Rated



Applications

- DC-DC Converters
- DC-AC Inverters
- High Voltage Switch-Mode and Resonant - Mode Power Supplies
- High Voltage Pulse Power Applications
- High Voltage Discharge Circuits in Lasers Pulsers, Spark Igniters, RF
- Generators



Absolute Ratings ($T_c=25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	1200	V
Drain Current -continuous	I_D	35	A
Drain Current - pulse*	I_{DM}	100	A
Gate-Source Voltage	V_{GSS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	2	J
Power Dissipation	PD	900	W
Operating and Storage Temperature Range	T_j, T_{STG}	-55~+150	$^\circ\text{C}$
Maximum Lead Temperature for Soldering Purposes	T_L	300	$^\circ\text{C}$

*Drain current limited by maximum junction temperature

Electrical Characteristics ($T_{CASE}=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Type	Max	Units
Off-Characteristics						
Drain-Source Voltage	BV_{DSS}	$I_D=3\text{mA}, V_{GS}=0\text{V}$	1200	-	-	V
Drain cut-off current	I_{DSS}	$V_{DS}=1200, V_{GS}=0\text{V}$	-	-	50	μA
Gate-body leakage current, forward	I_{GSSF}	$V_{DS}=0\text{V}, V_{GS}=30\text{V}$	-	-	300	nA

Gate-body leakage current,reverse	I_{GSSR}	$V_{DS}=0V, V_{GS}=-30V$	-	-	-300	nA
On-Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	3.5	-	6.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=1A$ (note1)	-	380	-	m Ω
Forward transconductance	Gfs	$V_{DS}=20V, I_D=15A$ (note1)	-	25	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V,$ $V_{GS}=0V,$ $f=1MHz$	-	23	-	nF
Output capacitance	C_{oss}		-	1153	-	pF
Reverse transfer capacitance	C_{rss}		-	75	-	pF
Switching Characteristics						
Turn-On delay time	$t_{d(on)}$	$V_{DD}=600V, I_D=15A$ $R_g=1\Omega$	-	72	-	ns
Turn-On rise time	t_r		-	60	-	ns
Turn-Off delay time	$T_{d(off)}$		-	86	-	ns
Turn-Off Fall time	t_f		-	60	-	ns
Total Gate Charge	Qg	$V_{DD}=600V, I_D=15A$ $V_{GS}=10V$	-	360	-	nC
Gate-Source charge	Qgs		-	135	-	nC
Gate-Drain charge	Qgd		-	153	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=35A,$ (note1)	-	-	1.2	V
Maximum Continuous Drain-Source Diode Forward Current		I_S	-	35	-	A
Reverse recovery time	t_{rr}	$I_F=20A$ $dI_F/dt=-100A/\mu s$ $V_R=100V$	-	300	-	ns
Reverse recovery charge	Qrr		-	2	-	μC

Thermal Characteristic

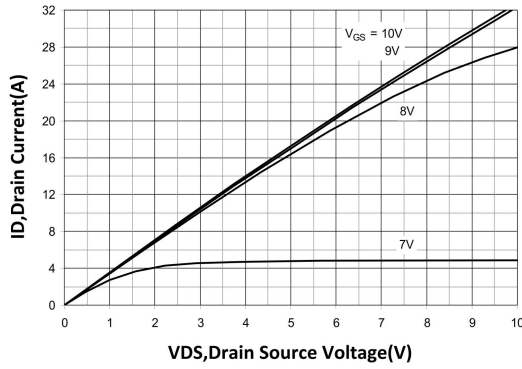
Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.138	$^{\circ}C/W$

Notes:

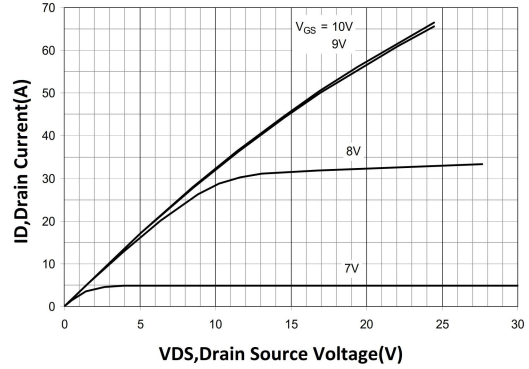
1. Pulse test, $t \leq 300\mu s$, duty cycle, $d \leq 2\%$.

Typical Electrical and Thermal Characteristics (Curves)

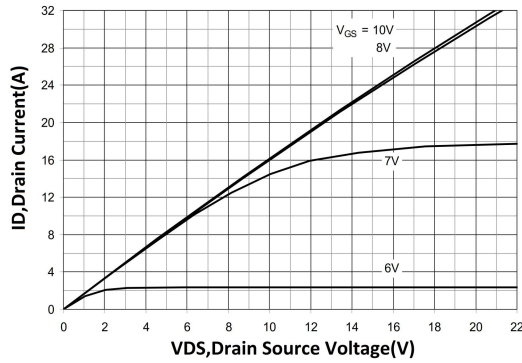
Output Characteristics@T_j=25°C



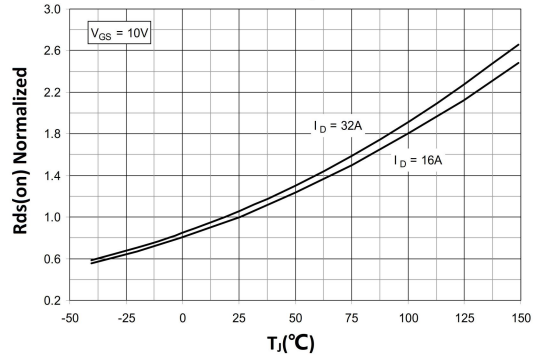
Extended Output Characteristics@T_j=25°C



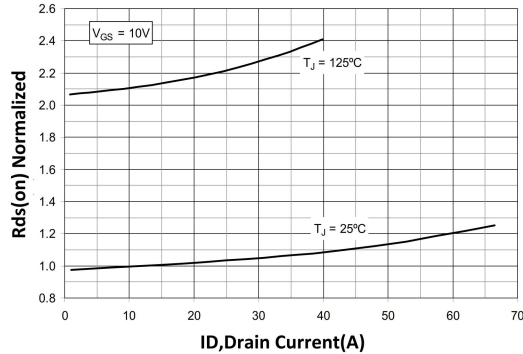
Output Characteristics@T_j=125°C



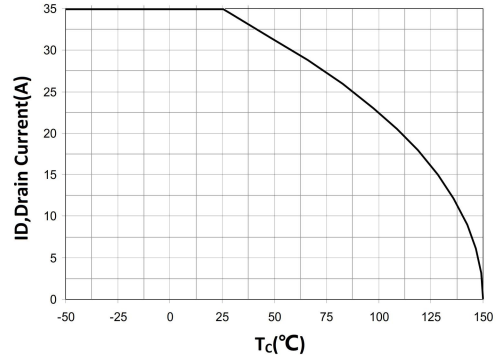
R_{ds(on)} Normalized vs. Junction Temperature



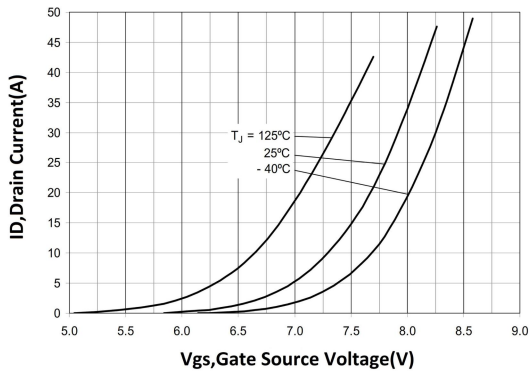
R_{ds(on)} Normalized vs. Drain Current



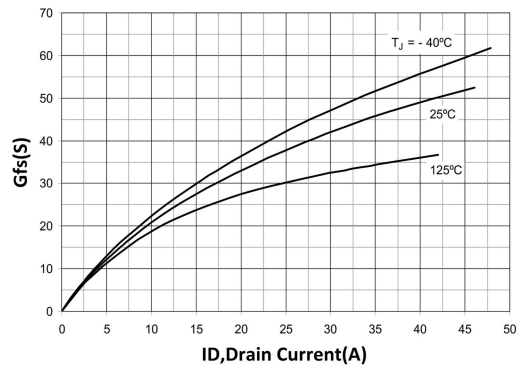
Maximum Drain Current vs. Case Temperature



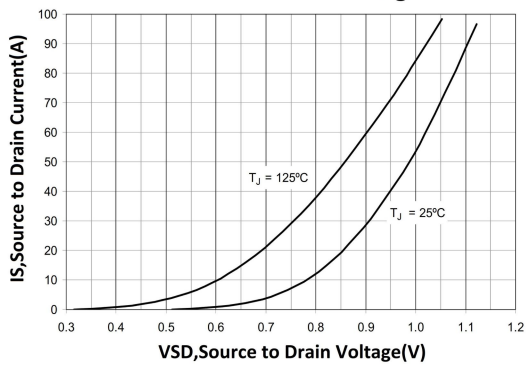
Input Admittance



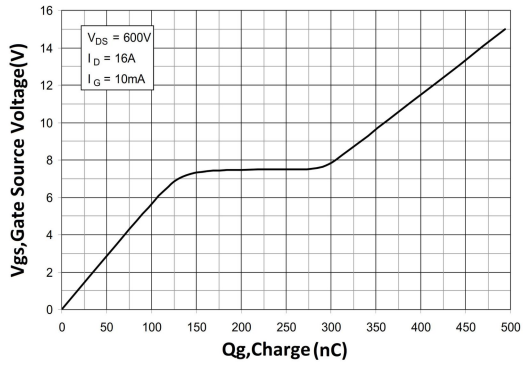
Transconductance



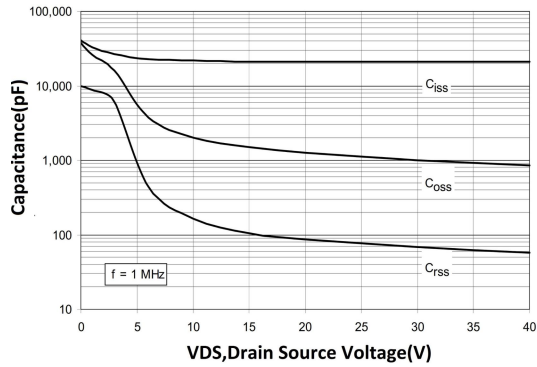
Diode Forward Voltage



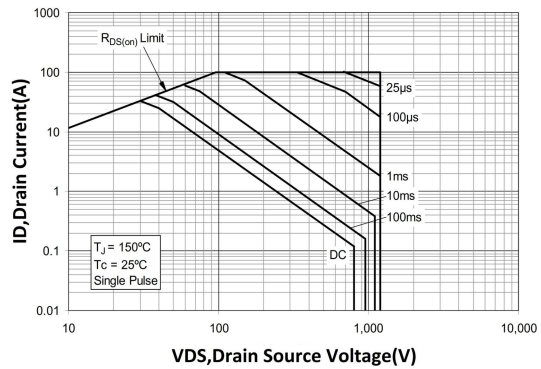
Gate Charge



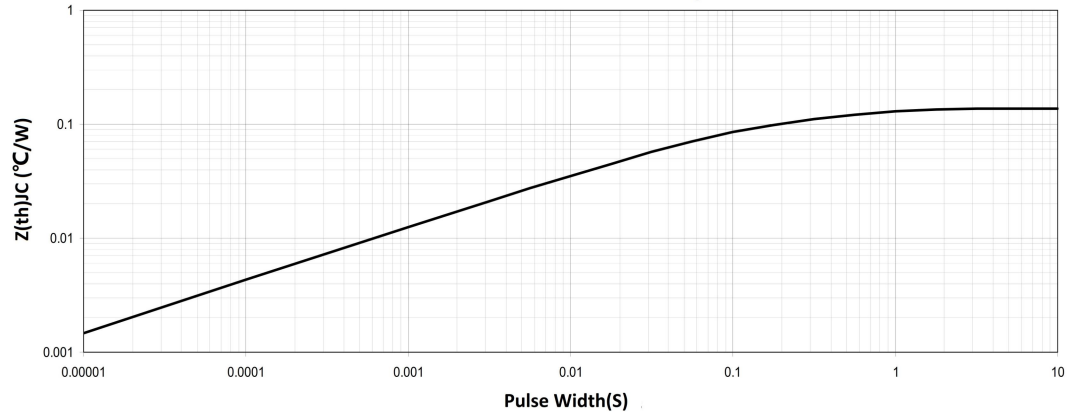
Capacitance



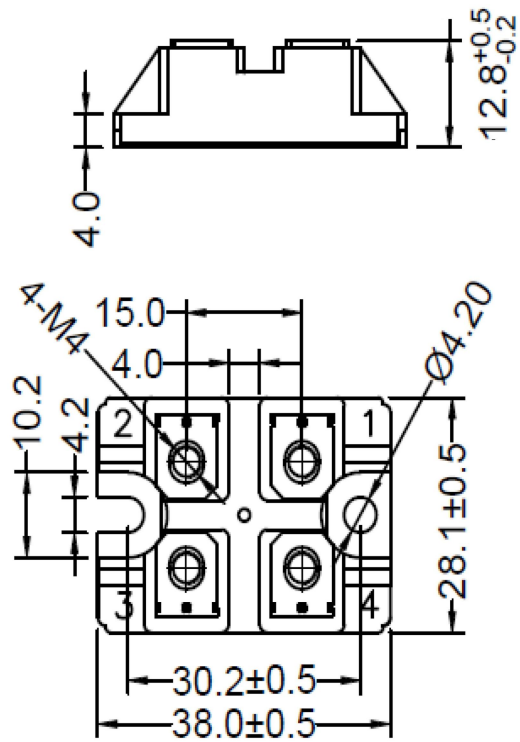
SOA



Maximum Transient Thermal Impedance



Package Mechanical DATA



SOT227 Unit:mm