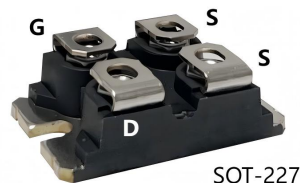


Features

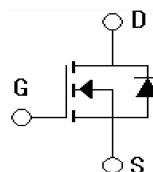
- N-Channel, Low $R_{DS(on)}$
- High Current Handling Capability
- Fast Intrinsic Diode
- Avalanche Rated



SOT-227

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
Transient Gate-Source Voltage	V_{GSM}	± 30	V
Continuous Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current -continuous	I_D	35	A
Drain Current - pulse*	I_{DM}	100	A
Single Pulsed Avalanche Energy	E_{AS}	2	J
Power Dissipation	P_D	900	W
Operating and Storage Temperature Range	T_j, T_{STG}	$-55 \sim +150$	$^\circ\text{C}$
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	I _{GSS}	V _{DS} =0V, V _{GS} =±20V	-	-	±300	nA
On-Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	2.5	3.7	4.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =25A (note1)	-	462	-	mΩ
Forward transconductance	G _{fs}	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 Rg=1Ω	-	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	Q _g	V _{DD} =600V, I _D =15A V _{GS} =10V	-	360	-	nC
Gate-Source charge	Q _{gs}		-	135	-	nC
Gate-Drain charge	Q _{gd}		-	153	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =30A, (note1)	-	0.82	1.2	V
Continuous Drain-Source Diode Forward Current	I _S		-	35	-	A
Reverse recovery time	t _{rr}	I _F =20A dI _F /dt=-100A/us V _R =100V	-	300	-	ns
Reverse recovery charge	Q _{rr}		-	2	-	uC

Thermal Characteristic

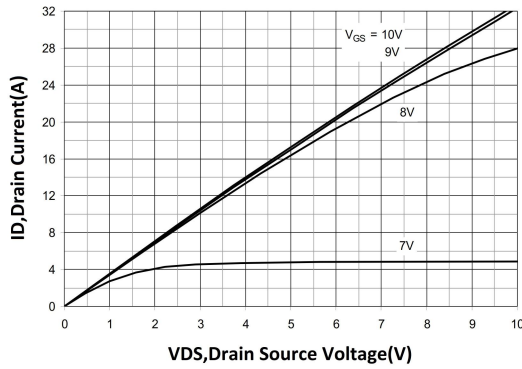
Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.138	$^{\circ}C/W$

Notes:

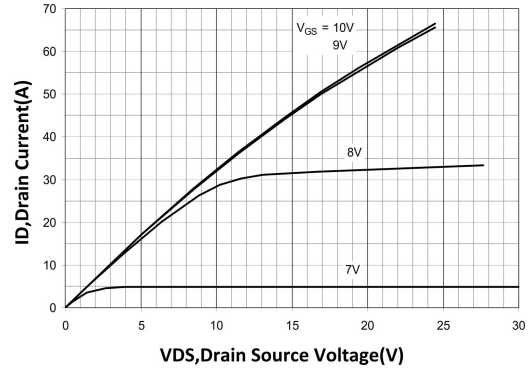
1. Pulse test, $t \leq 300\mu s$, duty cycle, $d \leq 2\%$.

Typical Electrical and Thermal Characteristics (Curves)

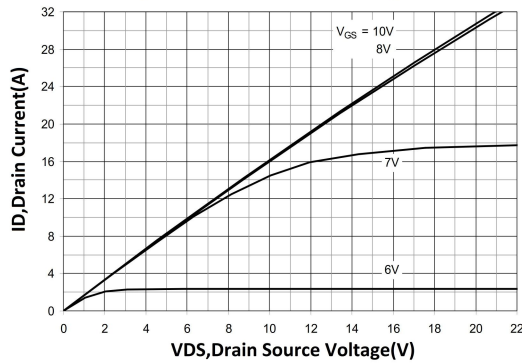
Output Characteristics@T_j=25°C



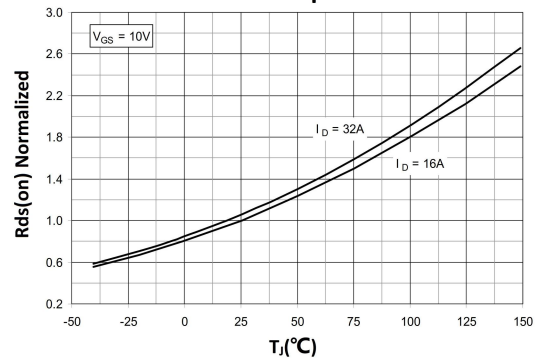
Extended Output Characteristics@T_j=25°C



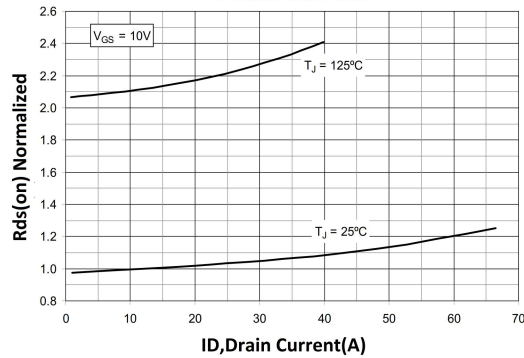
Output Characteristics@T_j=125°C



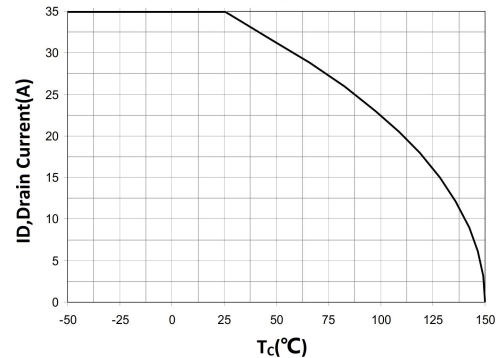
R_{ds(on)} Normalized vs. Junction Temperature



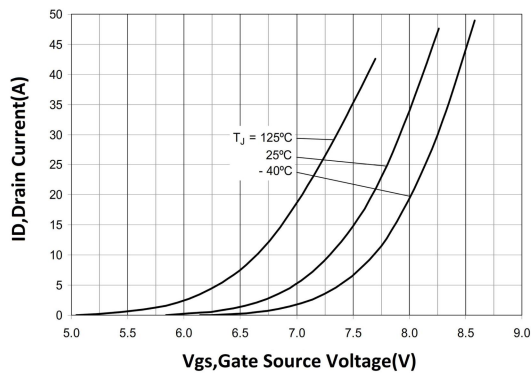
R_{ds(on)} Normalized vs. Drain Current



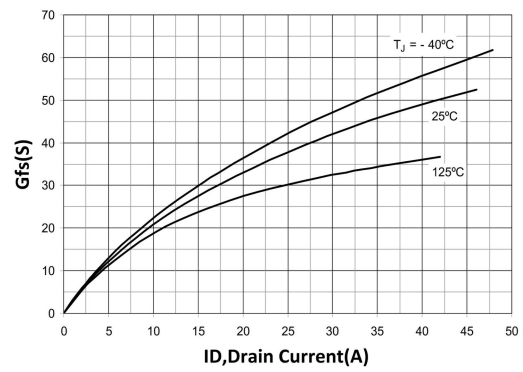
Maximum Drain Current vs. Case Temperature



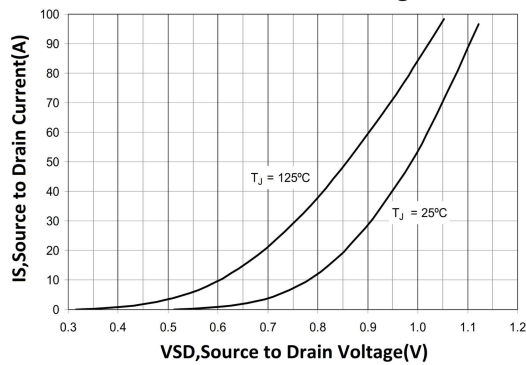
Input Admittance



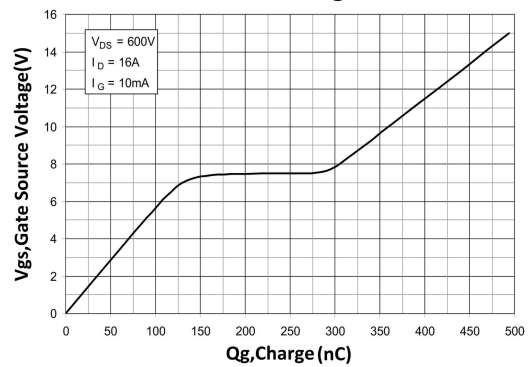
Transconductance



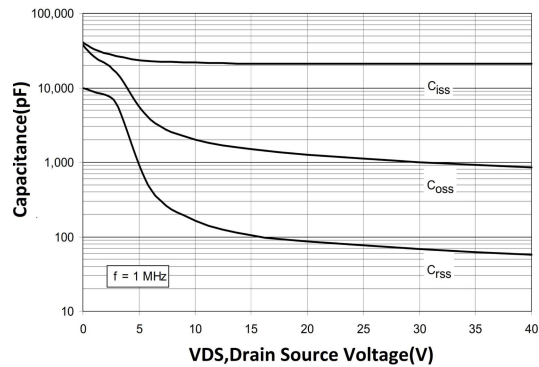
Diode Forward Voltage



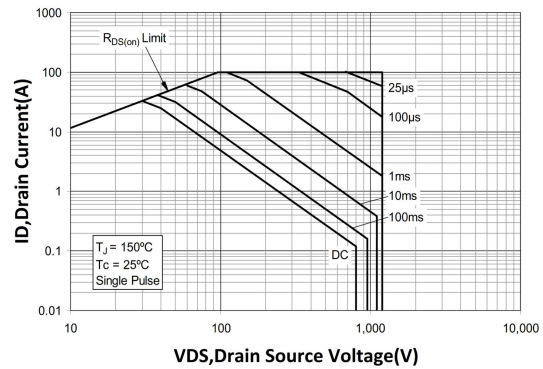
Gate Charge



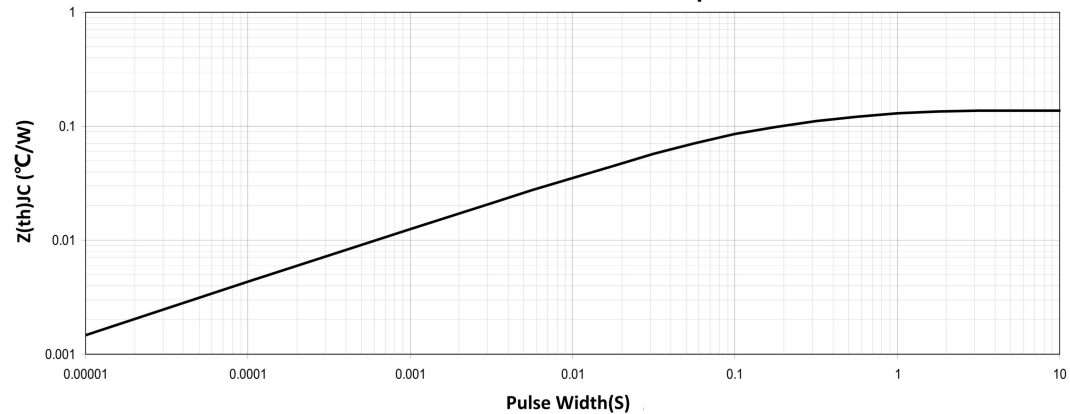
Capacitance



SOA



Maximum Transient Thermal Impedance



Package Mechanical DATA

