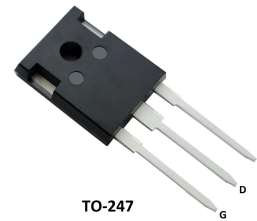


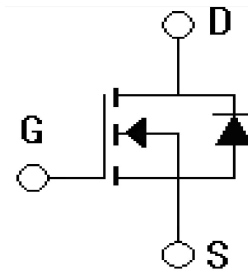
## Features

- $V_{DS}=1200V, I_D=12A$   
 $R_{DS(on)} < 3\Omega @ V_{GS}=10V$
- High density cell design for ultra low  $R_{Dson}$
- Low gate charge
- Improved  $dv/dt$  capability
- RoHS product



## Applications

- High Voltage Switched-mode and resonant-mode power supplies
- High Voltage Pulse Power Applications
- High Voltage Discharge circuits in Lasers Pulsers, Spark Igniters, RF Generators
- High Voltage DC-DC converters
- High Voltage DC-AC inverters



## Absolute Ratings ( $T_c=25^\circ C$ )

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DSS}$	1200	V
Gate-Source Voltage	$V_{GSS}$	$\pm 30$	V
Drain Current-continuous	$I_D$	12	A
Drain Current-pulse	$I_{DM}$	30	A
Single Pulsed Avalanche Energy	$E_{AS}$	500	mJ
Maximum Power Dissipation	PD TC=25°C Derate above 25°C	290	W
		2.17	
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55~+175	°C

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	$BV_{DSS}$	$I_D=1mA, V_{GS}=0V$	1200	-	-	V

Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=V_{DSS}, V_{GS}=0V$	-	-	25	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	$\pm 100$	nA
<b>On-Characteristics</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.5	-	5.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=1A$	-	2	3	$\Omega$
Forward Transconductance	$g_{fs}$	$V_{DS}=20V, I_D=6A$	5	9	-	S
<b>Dynamic Characteristics</b>						
Input capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	3150	-	pF
Output capacitance	$C_{oss}$		-	300	-	pF
Reverse transfer capacitance	$C_{rss}$		-	25	-	pF

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
<b>Switching-Characteristics</b>						
Turn-On delay time	$t_{d(on)}$	$V_{DS}=600V, I_D=6A, V_{GS}=10V$	-	34	-	ns
Turn-On rise time	$t_r$		-	25	-	ns
Turn-Off delay time	$t_{d(off)}$		-	62	-	ns
Turn-Off rise time	$t_f$		-	34	-	ns
Total Gate Charge	$Q_g$	$V_{DS}=600V, I_D=6A, V_{GS}=10V$	-	85	-	nC
Gate-Source charge	$Q_{gs}$		-	14	-	nC
Gate-Drain charge	$Q_{gd}$		-	48	-	nC
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
Maximum Continuous Drain-Source Diode Forward Current	$I_{SD}$	$V_{GS}=0V, I_S=12A$	0.5	-	1.2	V
Diode Forward Current	$I_S$	$TC=25^{\circ}C$	-	-	12	A
Reverse recovery time	$T_{rr}$	$I_S=6A, di/dt=100A/\mu S$	-	-	300	nS
Reverse recovery charge	$Q_{rr}$	$VR=100V, V_{GS}=0V$	-	0.5	-	$\mu C$

## Thermal Characteristic

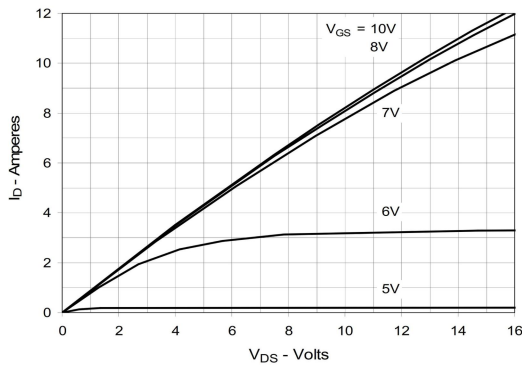
Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.4	$^{\circ}C/W$

Notes:

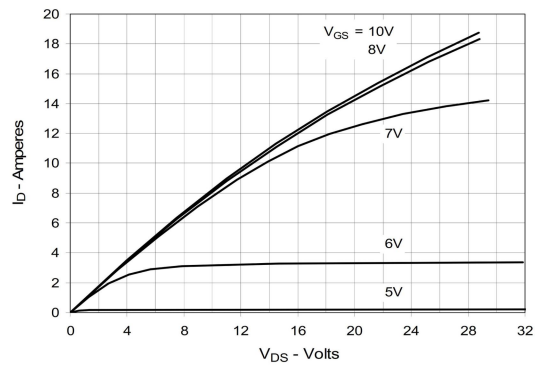
1. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$

## Electrical Characteristics

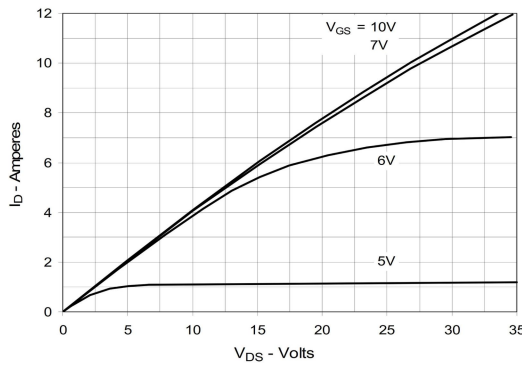
**Fig. 1. Output Characteristics @ 25°C**



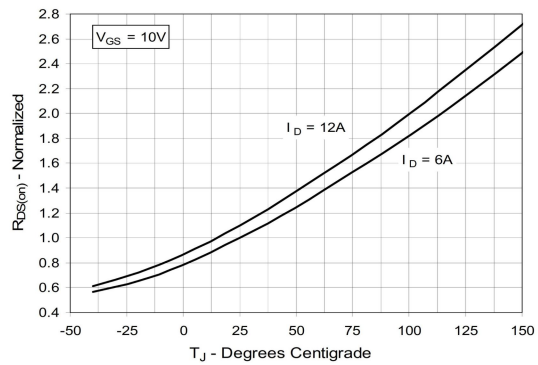
**Fig. 2. Extended Output Characteristics @ 25°C**



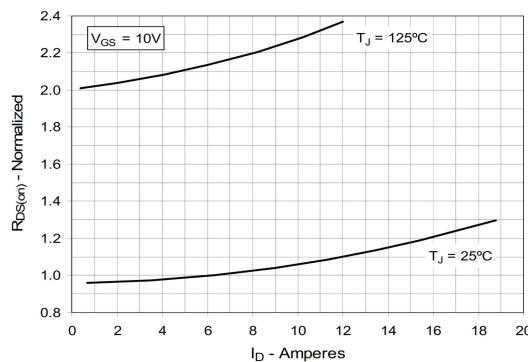
**Fig. 3. Output Characteristics @ 125°C**



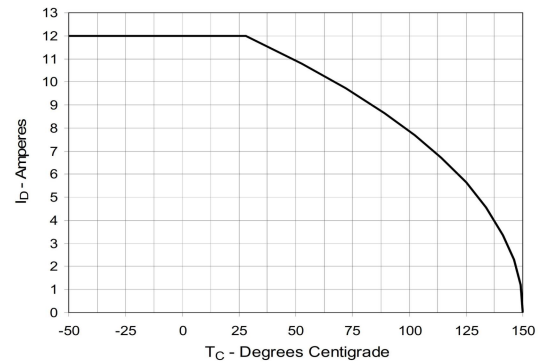
**Fig. 4.  $R_{DS(on)}$  Normalized to  $I_D = 6A$  Value vs. Junction Temperature**



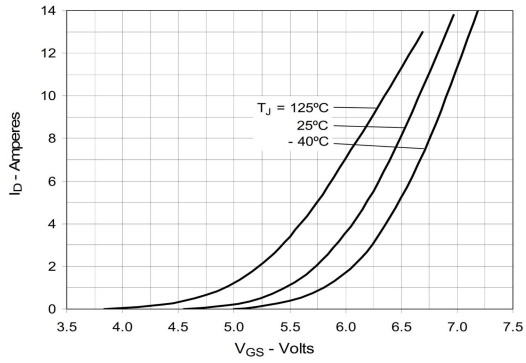
**Fig. 5.  $R_{DS(on)}$  Normalized to  $I_D = 6A$  Value vs. Drain Current**



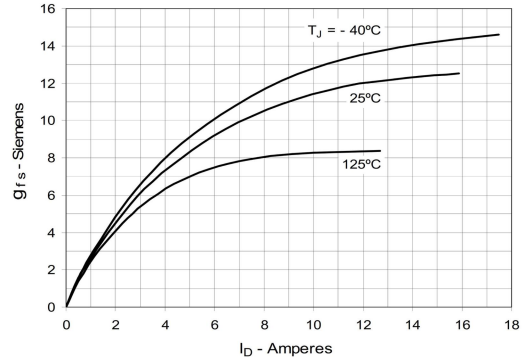
**Fig. 6. Maximum Drain Current vs. Case Temperature**



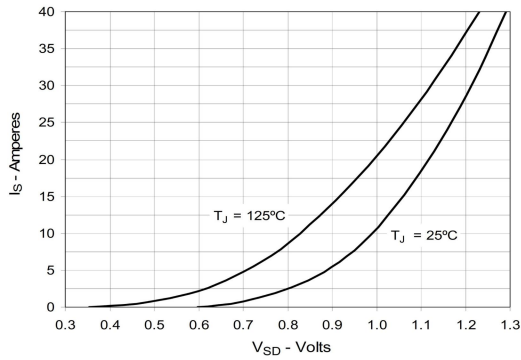
**Fig. 7. Input Admittance**



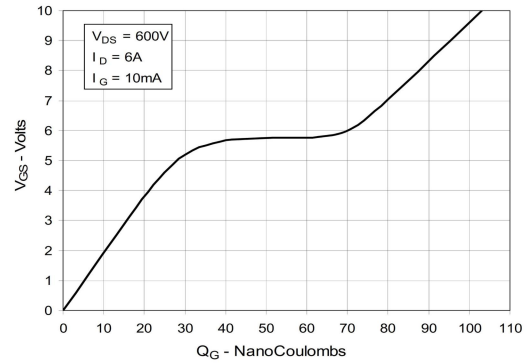
**Fig. 8. Transconductance**



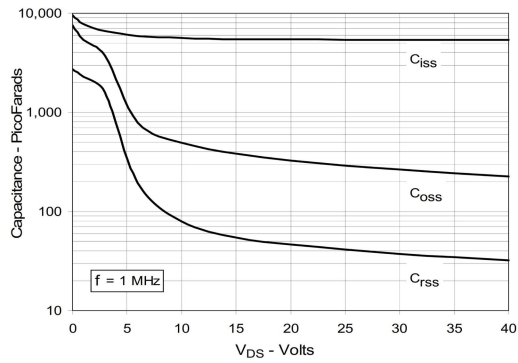
**Fig. 9. Forward Voltage Drop of Intrinsic Diode**



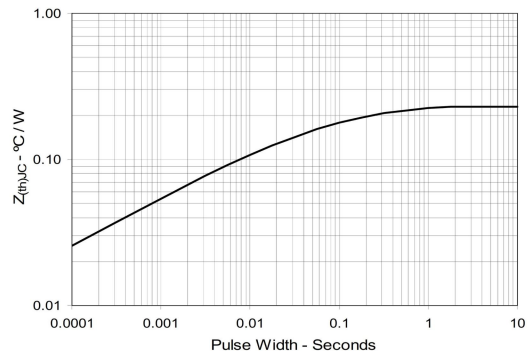
**Fig. 10. Gate Charge**



**Fig. 11. Capacitance**



**Fig. 12. Maximum Transient Thermal Impedance**



### Package Mechanical DATA

