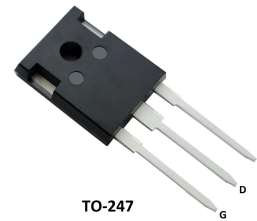


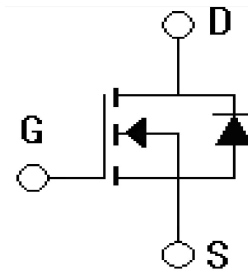
Features

- $V_{DS}=1200V, I_D=12A$
 $R_{DS(on)} < 3\Omega @ V_{GS}=10V$
- 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}	± 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	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	± 100	nA
On-Characteristics						
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	Ω
Forward Transconductance	g_{fs}	$V_{DS}=20V, I_D=6A$	5	9	-	S
Dynamic Characteristics						
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
Switching-Characteristics						
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
Drain-Source Diode Characteristics and Maximum Ratings						
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	-	μC

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

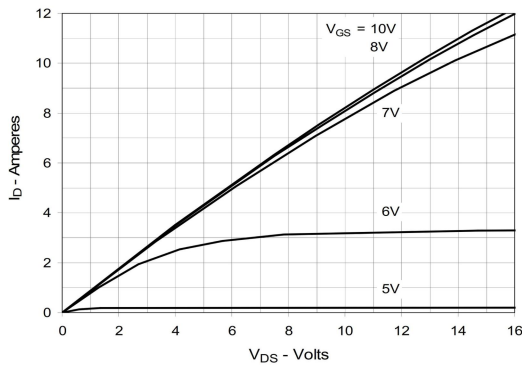


Fig. 2. Extended Output Characteristics @ 25°C

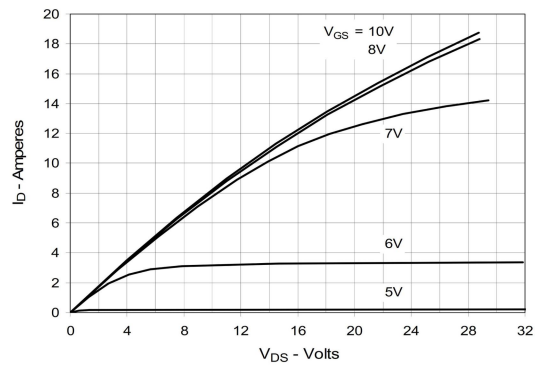


Fig. 3. Output Characteristics @ 125°C

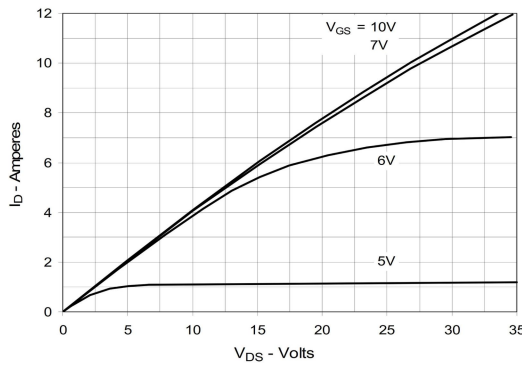


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 6A$ Value vs. Junction Temperature

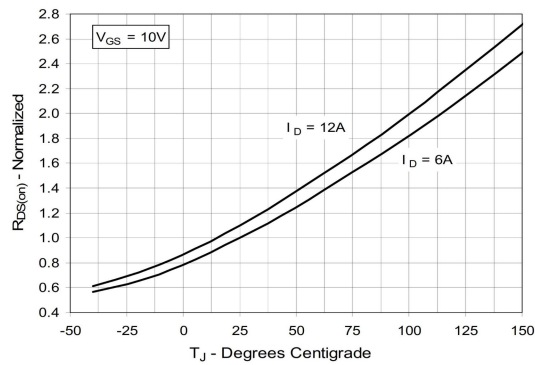


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 6A$ Value vs. Drain Current

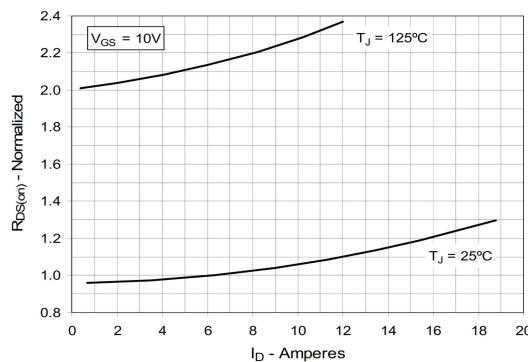


Fig. 6. Maximum Drain Current vs. Case Temperature

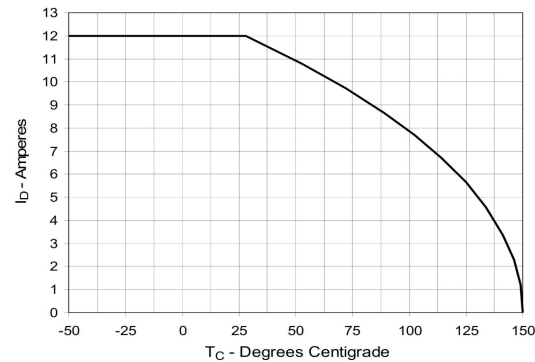


Fig. 7. Input Admittance

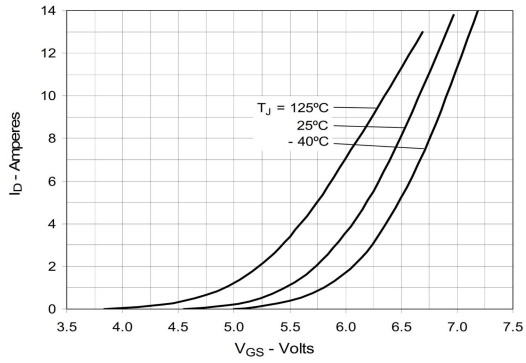


Fig. 8. Transconductance

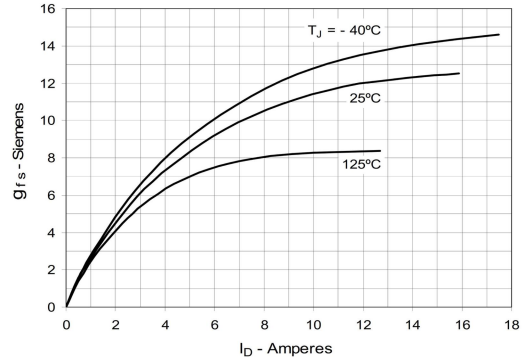


Fig. 9. Forward Voltage Drop of Intrinsic Diode

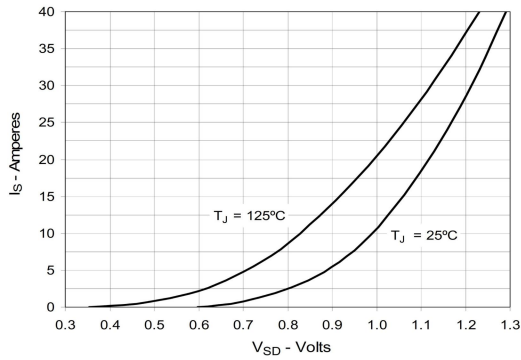


Fig. 10. Gate Charge

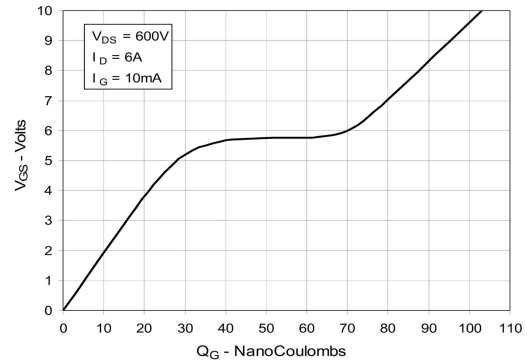


Fig. 11. Capacitance

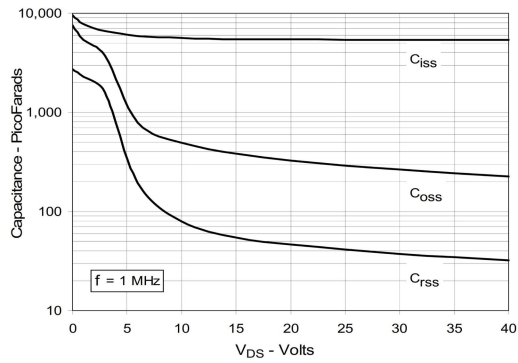
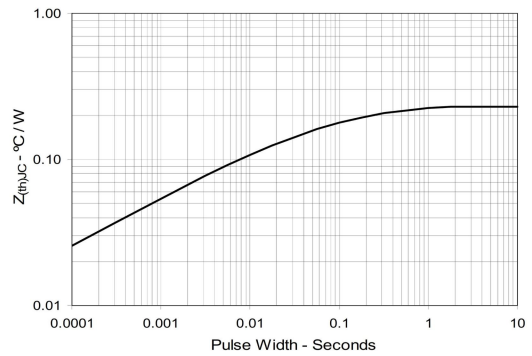
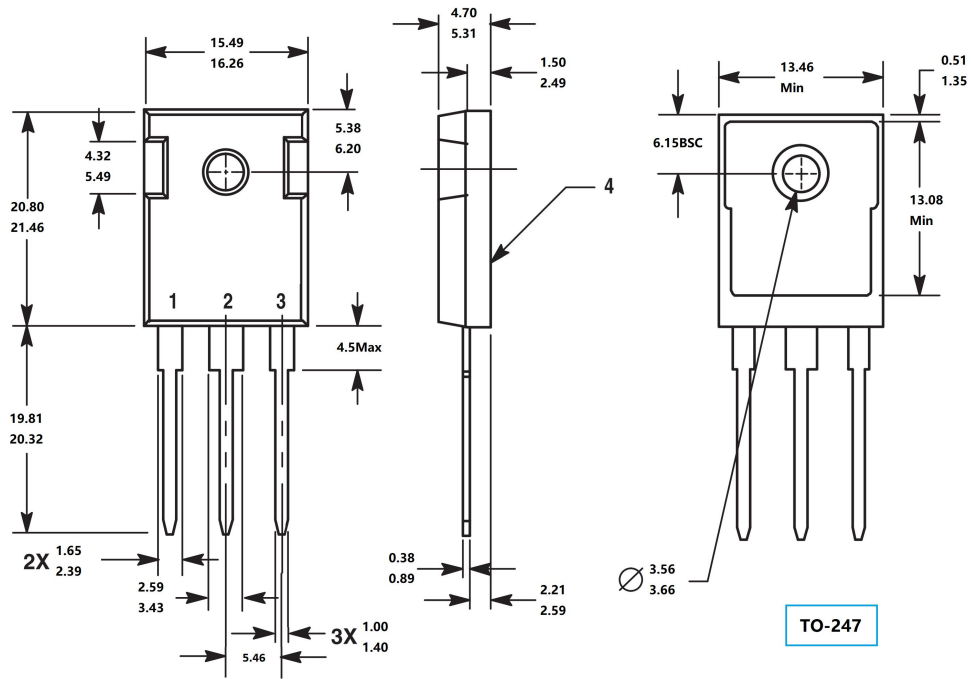


Fig. 12. Maximum Transient Thermal Impedance



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