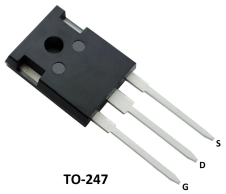
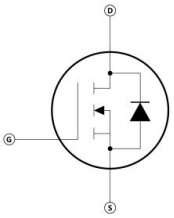
Features

- 100% avalanche tested
- Fast Intrinsic Diode
- Gate charge minimized
- Very low intrinsic capacitances
- High speed switching



Applications

- High Voltage Power Supplies
- PV Inverter
- Switching applications



Electrical ratings

Absolute maximum ratings			
Parameter	**Symbol**	**Value**	**Unit**
Drain-source voltage (V_{GS} = 0)	V_{DS}	2500	V
Gate- source voltage	V_{GS}	± 30	
Drain current (continuous) at T_C = 25 °C	I_D	1	A
Drain current (continuous) at T_c = 100 °C		0.6	
Drain current (pulsed)	I_{DM}	6	
Total dissipation at T_C = 25 °C	P_D	83	W
Single pulse avalanche energy (starting TJ = 25 °C, ID = IAR, VDD = 50 V)	EAS	800	mJ
Operating junction temperature	T_J	-55 ~ 150	℃
Storage temperature	T_{stg}		
Maximum lead temperature for soldering purpose	T_L	300	℃
Mounting Torque	Md	1.13	N • m
Weight	G	6	g

Electrical Characteristics (T_{vj} = 25°C unless otherwise specified)

On /off states						
Parameter	**Symbol**	**Test conditions**	**Min**	**Typ**	**Max**	**Unit**
Drain-source breakdown voltage	$V_{(BR)DSS}$	I_D = 250 μA, V_{GS} = 0	2500			V
Zero gate voltage drain current (V_{GS} = 0)	I_{DSS}	V_{DS} = Max rating V_{DS}=Max rating, T_C=125 °C			100 1000	μA
Gate-body leakage current (V_{DS} = 0)	I_{GSS}	V_{GS} = ± 30 V			±200	nA

Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 μA	4.5		6.5	V
Static drain-source on resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 50mA	-	30	50	Ω

Dynamic						
Parameter	**Symbol**	**Test conditions**	**Min**	**Typ**	**Max**	**Unit**
Forward transconductance	g_{fs}	V_{DS} = 15 V, I_D = 0.5A	88	145		mS
Input capacitance	C_{iss}	V_{DS}=25V,f=1MHz,V_{GS}=0		116		pF
Output capacitance	C_{oss}			8		
Reverse transfer capacitance	C_{rss}			3		
Total gate charge	Q_g	V_{DD}=1250V,I_D=0.5mA V_{GS}=10V		7.4		nC
Gate-source charge	Q_{gs}			0.7		
Gate-drain charge	Q_{gd}			5.3		
Switching times						
Parameter	**Symbol**	**Test conditions**	**Min**	**Typ**	**Max**	**Unit**
Turn-on delay time	$t_{d(on)}$	**Resistive load** V_{DD} = 1250 V, I_D =0.5A, R_G = 4.7 Ω, V_{GS} = 10 V		19		ns
Rise time	t_r			19		
Turn-off-delay time	$t_{d(off)}$			32		
Fall time	t_f			33		
Source drain diode						
Parameter	**Symbol**	**Test conditions**	**Min**	**Typ**	**Max**	**Unit**
Source-drain current	I_{SD}				1	A
Source-drain current (pulsed)	I_{SDM}				4	
Forward on voltage	V_{SD}	I_{SD}= 1A, V_{GS}= 0			1.3	V
Reverse recovery time	t_{rr}	I_{SD}= 1A, di/dt=50A/μs V_{DD}= 100 V		1500		ns
Reverse recovery charge	Q_{rr}			9		μC
Reverse recovery current	I_{RRM}			0.3		A
Reverse recovery time	t_{rr}	S_D=15A, di/dt=100A/μs V_{DD}= 60V T_J=150°C		1300		ns
Reverse recovery charge	Q_{rr}			8.5		μC
Reverse recovery current	I_{RRM}			0.25		A

Thermal data			
Parameter	**Symbol**	**Value**	**Unit**
Thermal resistance junction-case max	$R_{thj\text{-}case}$	1.5	W/℃
Thermal resistance junction-ambient max	$R_{thj\text{-}amb}$	50	

Electrical characteristics

Fig. 1. Output Characteristics @ T_J = 25ºC

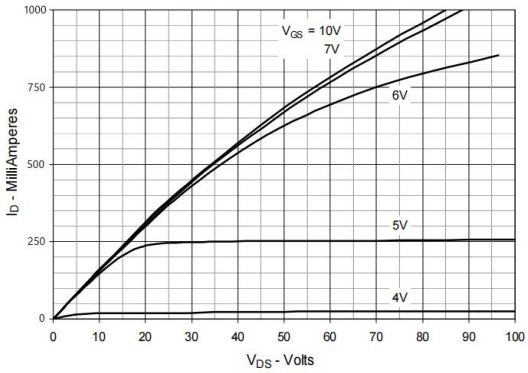


Fig. 2. Extended Output Characteristics @ T_J = 25ºC

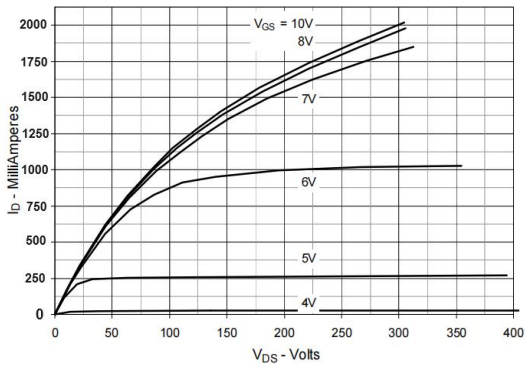


Fig. 3. Output Characteristics @ T_J = 125ºC

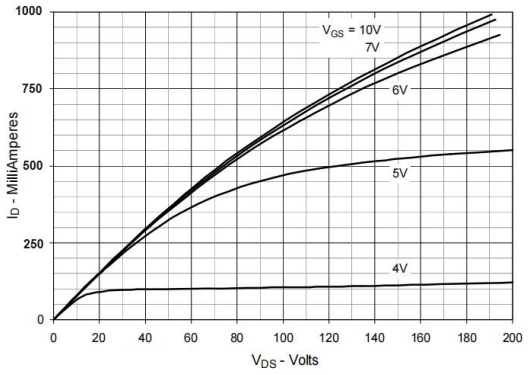


Fig. 4. $R_{DS(on)}$ Normalized to I_D = 100mA Value vs. Junction Temperature

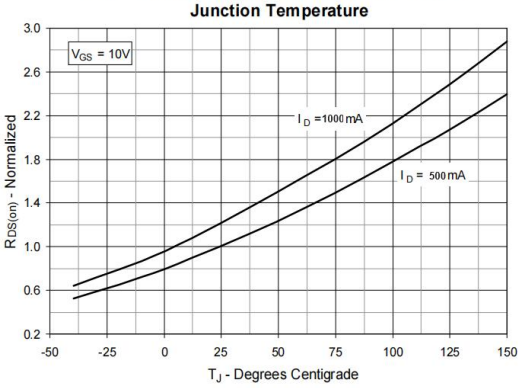


Fig. 5. $R_{DS(on)}$ Normalized to I_D = 100mA Value vs. Drain Current

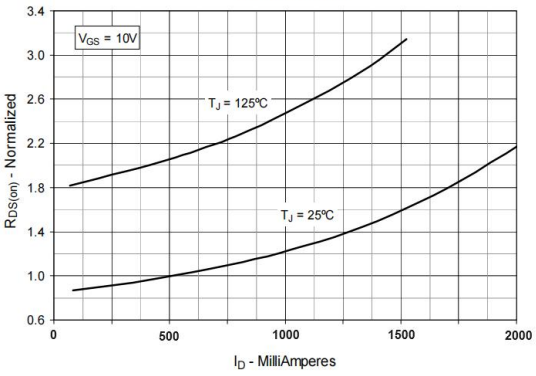


Fig. 6. Maximum Drain Current vs. Case Temperature

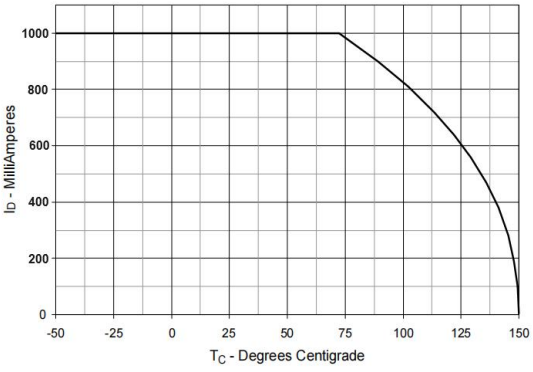


Fig. 7. Input Admittance

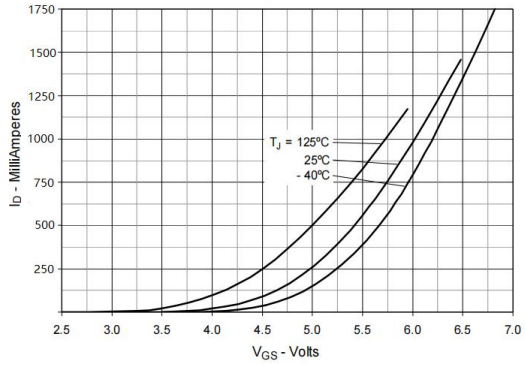


Fig. 8. Transconductance

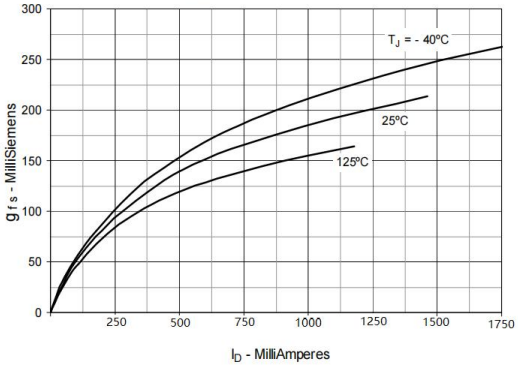


Fig. 9. Forward Voltage Drop of Intrinsic Diode

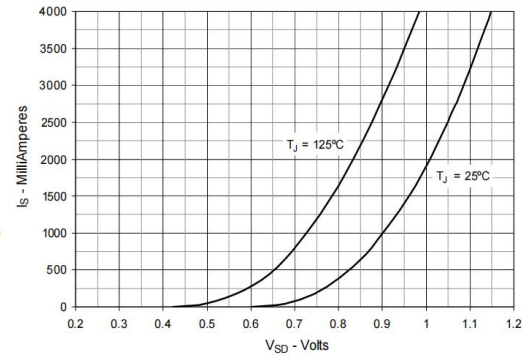


Fig. 10. Gate Charge

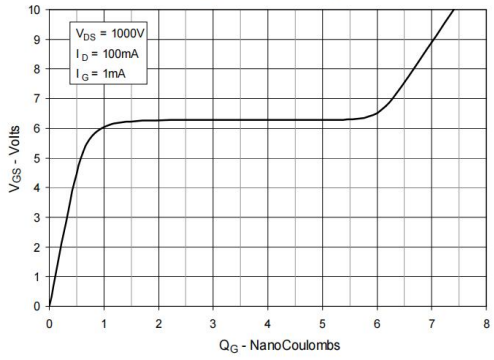


Fig. 11. Capacitance

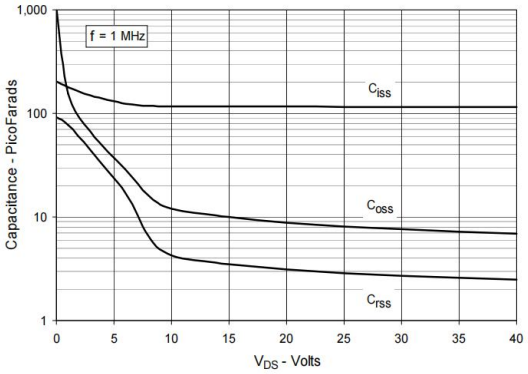


Fig. 12. Maximum Transient Thermal Impedance

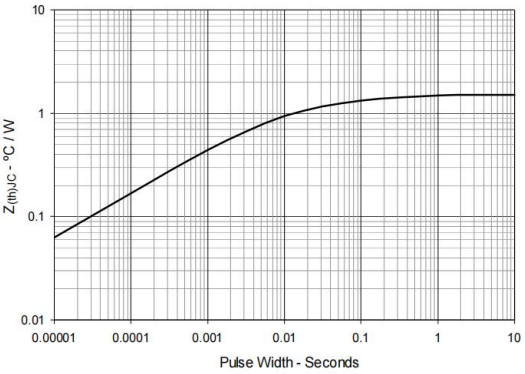


Fig. 13. Forward-Bias Safe Operating Area
@ T_C = 25°C

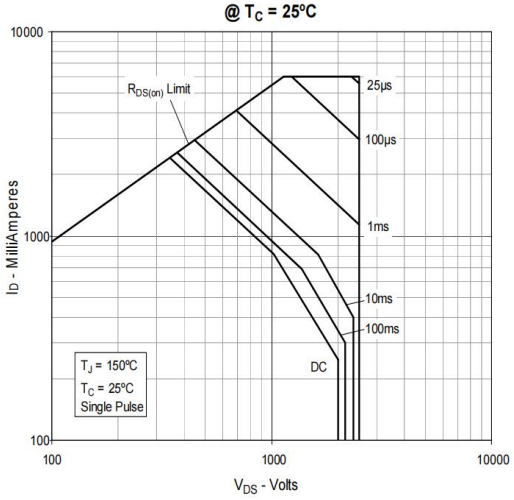
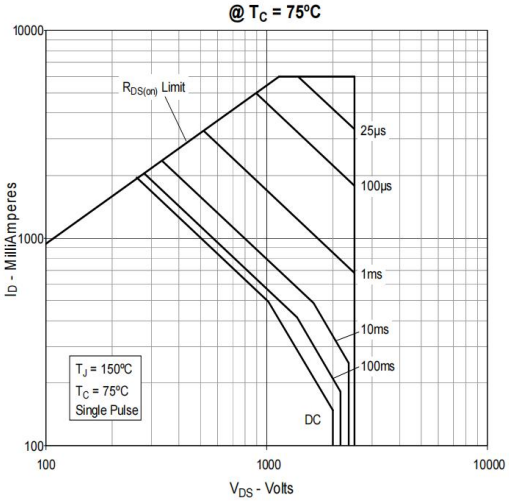
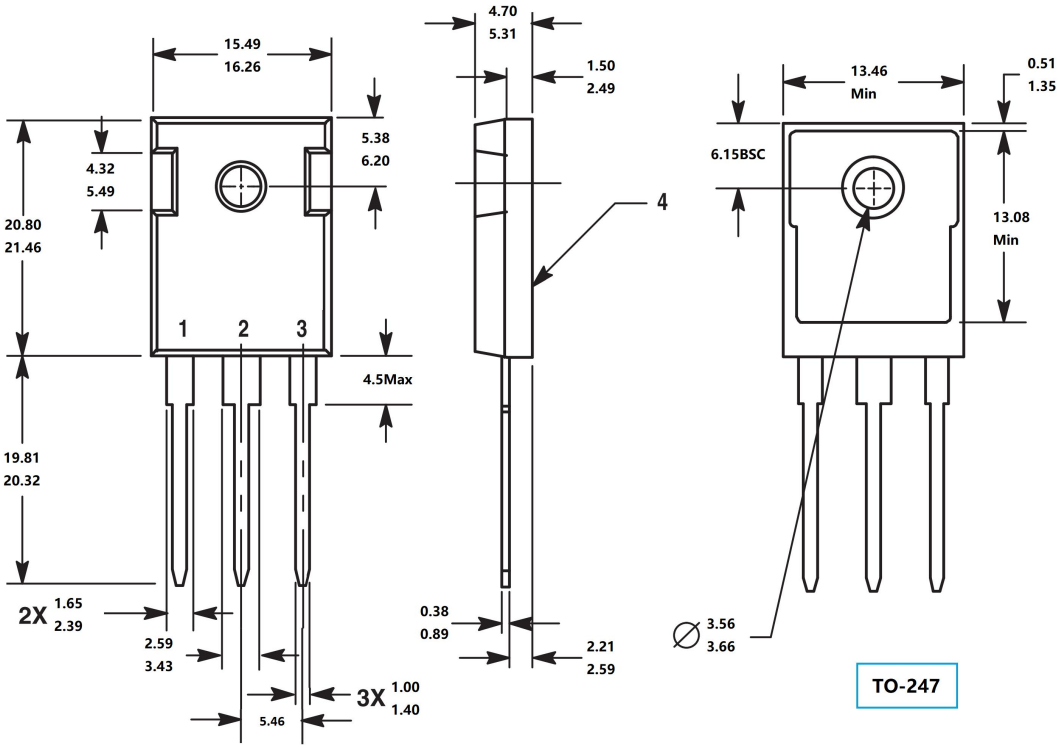


Fig. 14. Forward-Bias Safe Operating Area
@ T_C = 75°C



Package outline dimension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6.20
4.32
5.49
20.80
21.46
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2
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2X 1.65
2.39
2.59
3.43
3X 1.00
1.40
5.46
4.70
5.31
1.50
2.49
4
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2.59
13.46
Min
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Min
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3.66
TO-247