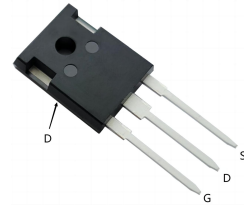


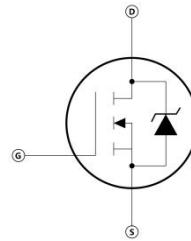
Features

- 100% avalanche tested
- Avalanche ruggedness
- Gate charge minimized
- Very low intrinsic capacitance
- Very low on-resistance



Applications

- UPS
- PV Inverter
- Switching applications



Absolute maximum ratings (T_{vj} = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-source voltage (V _{GS} = 0)	V _{DSS}	850	V
Transient Gate- source voltage	V _{GSM}	± 30	
Continuous Gate- source voltage	V _{GSS}	± 20	
Drain current (continuous) at T _C = 25 °C	I _D	50	A
Drain current (continuous) at T _C = 100 °C		28	
Drain current (pulsed)	I _{DM}	125	
Continuous Pulse Avalanche Current	I _{AR}	25	A
Single pulse avalanche energy (starting T _J = 25 °C, I _D = I _{AR} , V _{DD} = 50 V)	E _{AS}	1000	mJ
Total dissipation at T _C = 25 °C	P _{TOT}	892	W
Total dissipation at T _C = 100 °C		357	W
Operating junction temperature	T _J	-55 to 150	°C
Storage temperature	T _{stg}		
Maximum lead temperature for soldering purpose	T _L	260	

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 = 1 mA, V _{GS} = 0	850			V

Zero gate voltage drain current ($V_{GS} = 0$)	I_{DSS}	$V_{DS} = \text{Max rating}$			50	μA
		$V_{DS}=\text{Max rating}, T_C=125\text{ }^{\circ}C$			3000	
Gate-body leakage current ($V_{DS} = 0$)	I_{GSS}	$V_{GS} = \pm 20\text{ V}$			± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\text{ }\mu A$	3	4	5	V
Static drain-source on resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 15A$ @25 $^{\circ}C$		106	130	m Ω
Dynamic						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Input capacitance	C_{iss}	$V_{DS}=25V, f=1MHz, V_{GS}=0$		3010		pF
Output capacitance	C_{oss}			1200		
Reverse transfer capacitance	C_{rss}			10		
Gate input resistance	R_g	f=1MHz Gate DC Bias=0 Test signal level=20mV open drain		2.0		Ω
	G_{fs}	$V_{DS}=10V, I_D=25A$	19	32		S
Total gate charge	Q_g	$V_{DD}=425V, I_D=25A$ $V_{GS}=10V$		178		nC
Gate-source charge	Q_{gs}			23		
Gate-drain charge	Q_{gd}			63		
Gate plateau voltage	V_P			6		V
Switching times						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 425\text{ V}, I_D = 25A,$ $R_G = 10\Omega, V_{GS} = 10\text{ V}$		31		ns
Rise time	t_r			43		
Turn-off-delay time	$t_{d(off)}$			85		
Fall time	t_f			13		
Source drain diode						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Forward on voltage	V_{SD}	$I_{SD}= 1\text{ A}, V_{GS}= 0V$		0.68	1.2	V
Reverse recovery time	t_{rr}	$I_{SD}= 25A, di/dt= 100A/\mu s$ $V_R= 100\text{ V}$		210		ns
Reverse recovery charge	Q_{rr}			1.75		μC
Reverse recovery current	I_{RRM}			15		A

Thermal data

Parameter	Symbol	Value	Unit
Thermal resistance junction-case,max	$R_{thj-case}$	0.14	°C/W
Thermal resistance junction-ambient,max	$R_{thj-amb}$	40	

Electrical characteristics

Fig. 1. Output Characteristics @ $T_J = 25^\circ\text{C}$

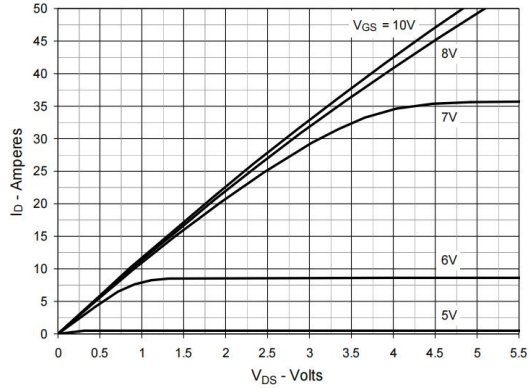


Fig. 2. Extended Output Characteristics @ $T_J = 25^\circ\text{C}$

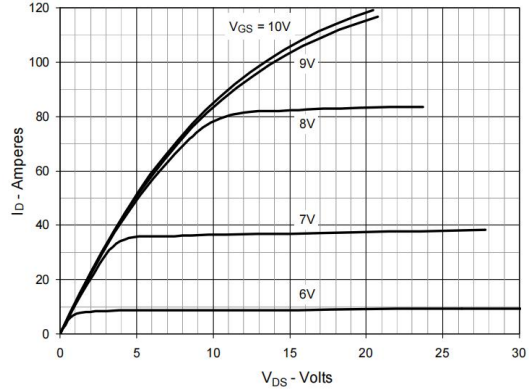


Fig. 3. Output Characteristics @ $T_J = 125^\circ\text{C}$

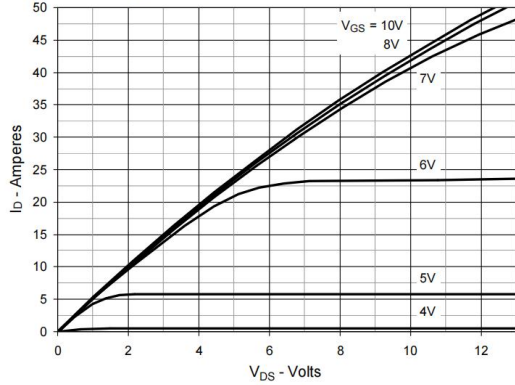


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 25\text{A}$ Value vs. Junction Temperature

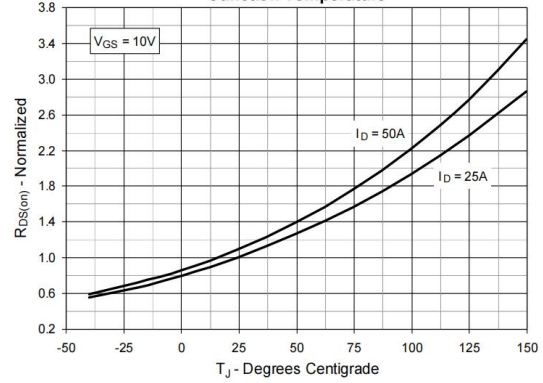


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 25\text{A}$ Value vs. Drain Current

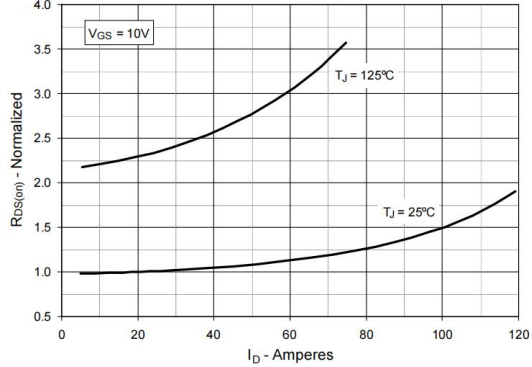


Fig. 6. Normalized Breakdown & Threshold Voltages vs. Junction Temperature

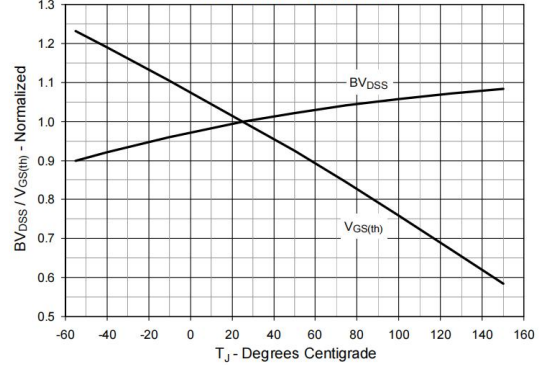


Fig. 7. Maximum Drain Current vs. Case Temperature

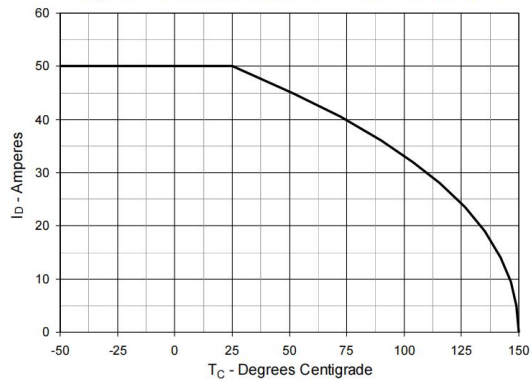


Fig. 8. Input Admittance

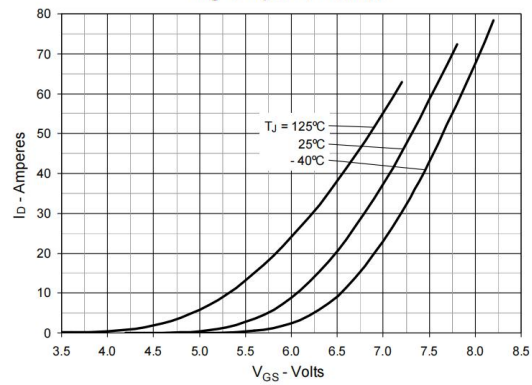


Fig. 9. Transconductance

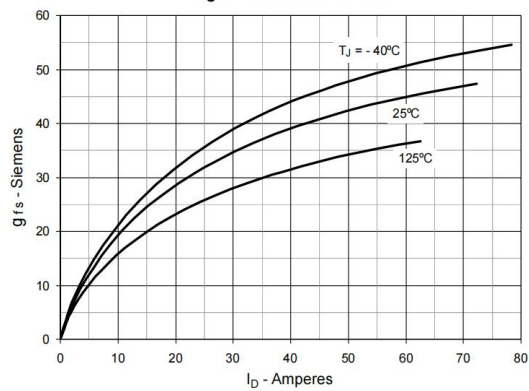


Fig. 10. Forward Voltage Drop of Intrinsic Diode

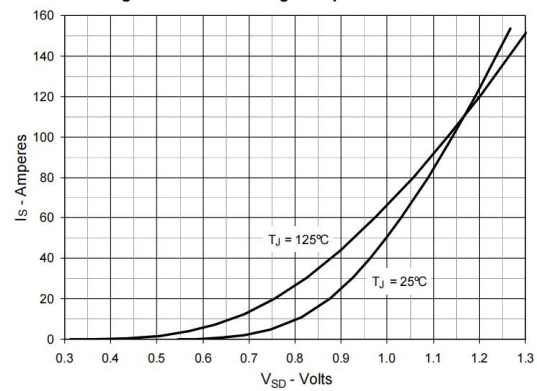


Fig. 11. Gate Charge

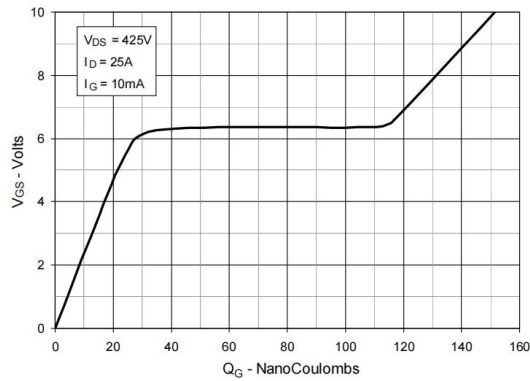


Fig. 12. Capacitance

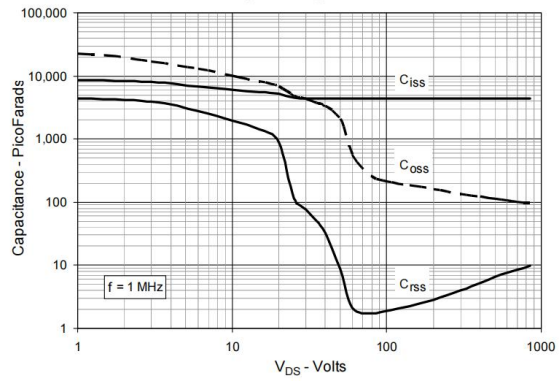


Fig. 13. Output Capacitance Stored Energy

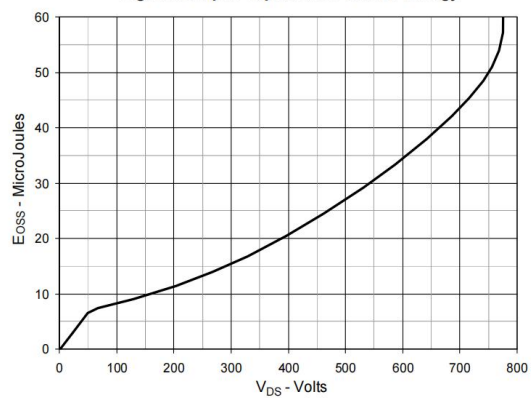


Fig. 14. Forward-Bias Safe Operating Area

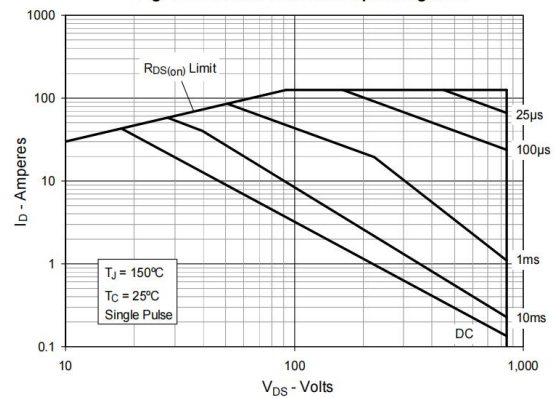
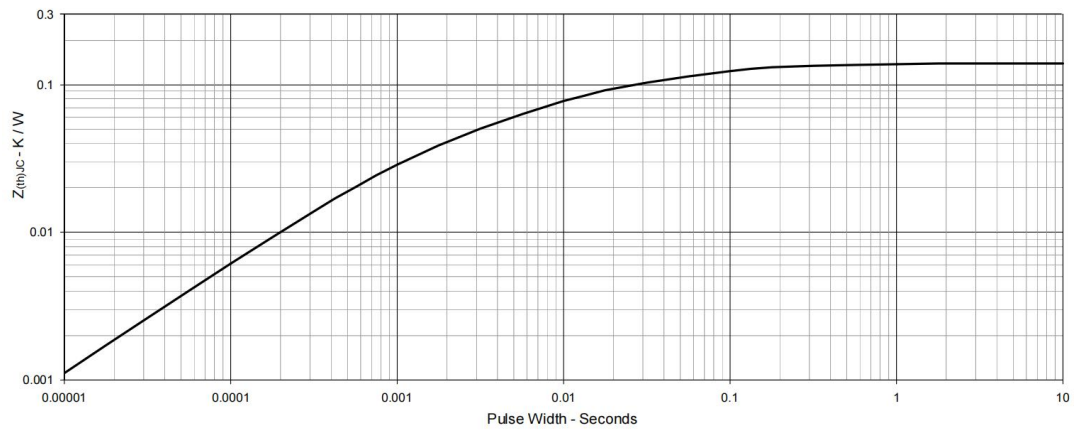


Fig. 15. Maximum Transient Thermal Impedance



Package outline dimension

