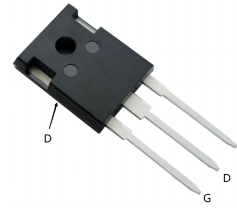


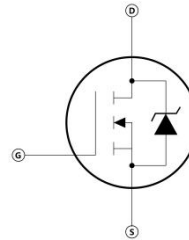
Features

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



Applications

- UPS
- PV Inverter
- Switching applications



Electrical ratings

Absolute maximum ratings			
Parameter	Symbol	Value	Unit
Drain-source voltage ($V_{GS} = 0$)	V_{DS}	850	V
Gate- source voltage	V_{GS}	± 30	
Drain current (continuous) at $T_C = 25\text{ }^{\circ}\text{C}$	I_D	50	A
Drain current (continuous) at $T_C = 100\text{ }^{\circ}\text{C}$		28	
Drain current (pulsed)	I_{DM}	125	
Continuous Pulse Avalanche Current	I_{AR}	25	A
Single pulse avalanche energy (starting $T_J = 25\text{ }^{\circ}\text{C}$, $I_D = I_{AR}$, $V_{DD} = 50\text{ V}$)	E_{AS}	1000	mJ
Total dissipation at $T_C = 25\text{ }^{\circ}\text{C}$	P_{TOT}	890	W
Derating factor		2.23	W/ $^{\circ}\text{C}$
Operating junction temperature	T_J	-55 to 150	$^{\circ}\text{C}$
Storage temperature	T_{stg}		
Maximum lead temperature for soldering purpose	T_L	260	
Isolation Voltage for terminal to case	V_{ISO}	3.0	KV

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

On /off states						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D = 1\text{ mA}$, $V_{GS} = 0$	850			V
Zero gate voltage drain current ($V_{GS} = 0$)	I_{DSS}	$V_{DS} = \text{Max rating}$			50	μA
		$V_{DS} = \text{Max rating}$, $T_C = 125\text{ }^{\circ}\text{C}$			3000	

Gate-body leakage current ($V_{DS} = 0$)	I_{GSS}	$V_{GS} = \pm 30 \text{ V}$			± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	3	4	5	V
Static drain-source on resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 15A$ @25°C		106	130	mΩ
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
	Gfs	$V_{DS}=10V, I_D=25A$	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	$R_{thj-case}$	0.21	°C/W
Thermal resistance junction-ambient max	$R_{thj-amb}$	40	

Electrical characteristics

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

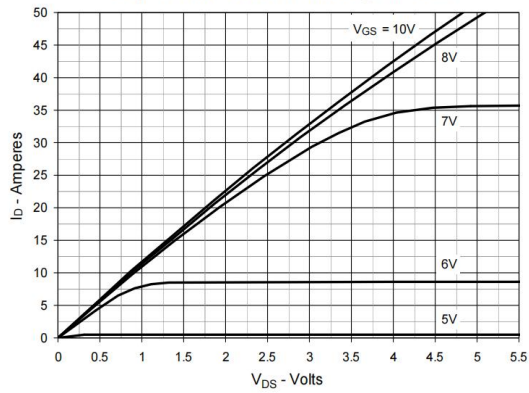


Fig. 2. Extended Output Characteristics @ $T_J = 25^\circ\text{C}$

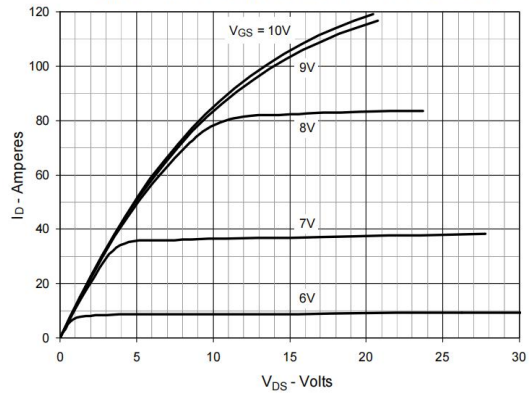


Fig. 3. Output Characteristics @ $T_J = 125^\circ\text{C}$

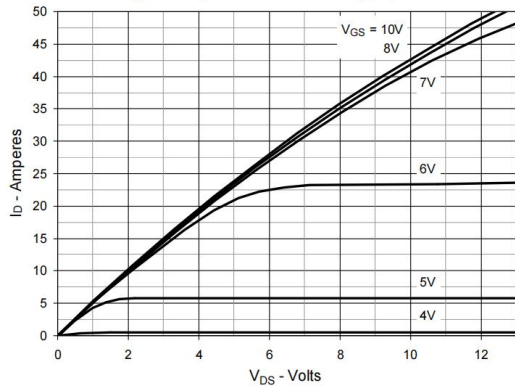


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 25\text{A}$ Value vs. Junction Temperature

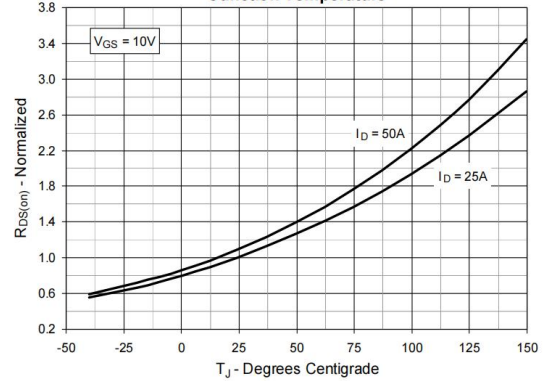


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 25\text{A}$ Value vs. Drain Current

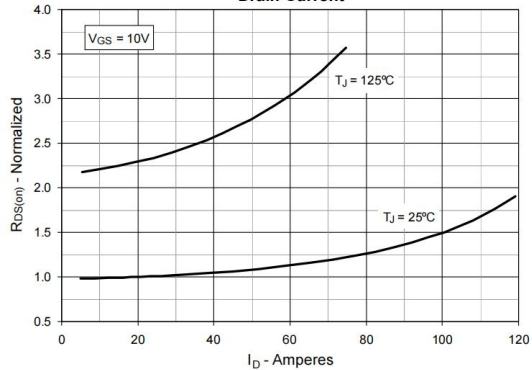


Fig. 6. Normalized Breakdown & Threshold Voltages vs. Junction Temperature

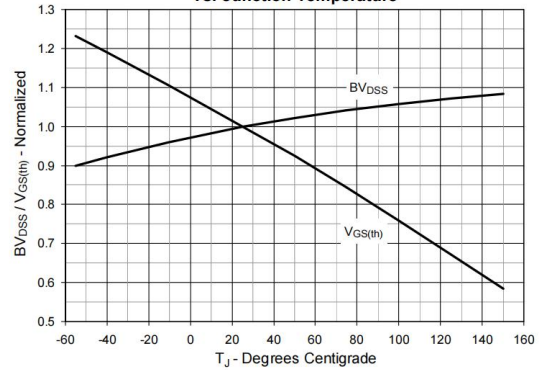


Fig. 7. Maximum Drain Current vs. Case Temperature

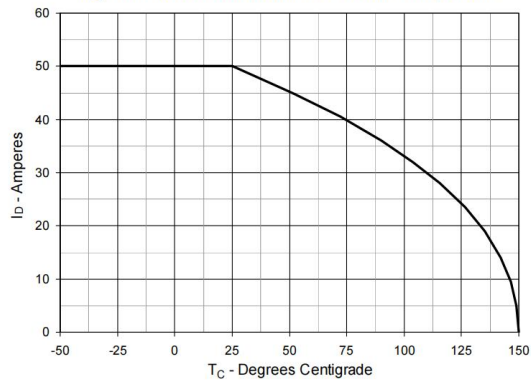


Fig. 8. Input Admittance

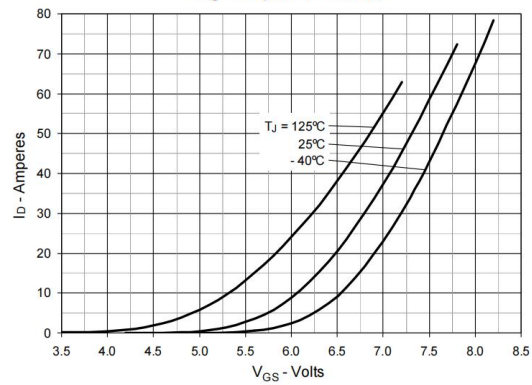


Fig. 9. Transconductance

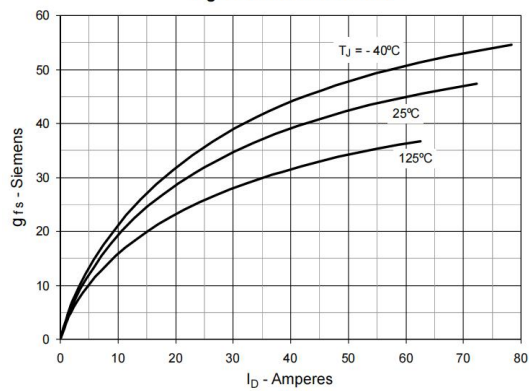


Fig. 10. Forward Voltage Drop of Intrinsic Diode

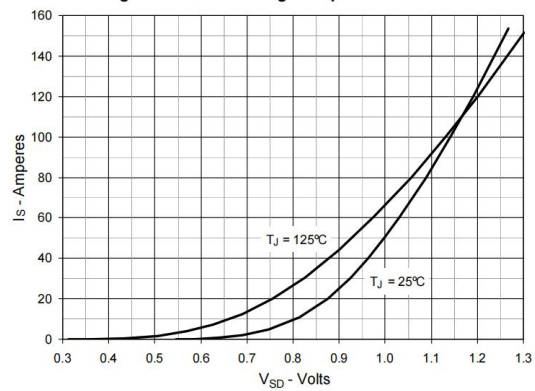


Fig. 11. Gate Charge

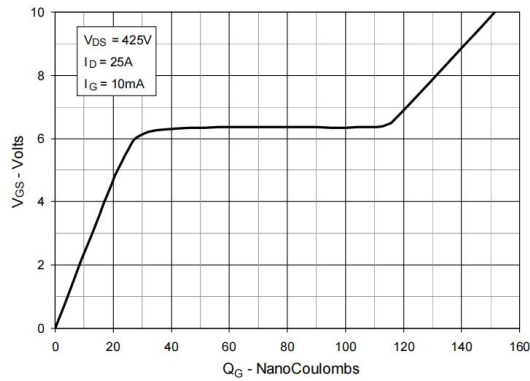


Fig. 12. Capacitance

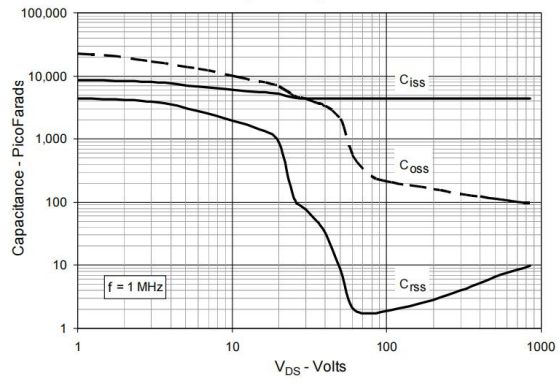


Fig. 13. Output Capacitance Stored Energy

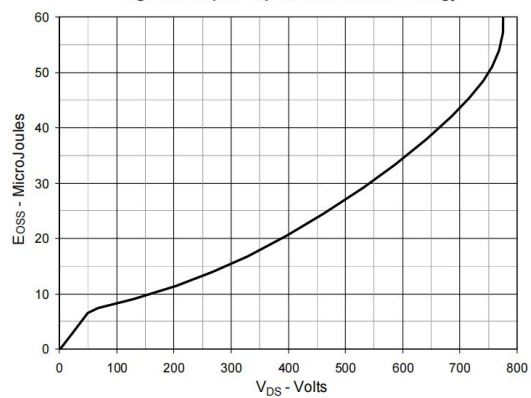


Fig. 14. Forward-Bias Safe Operating Area

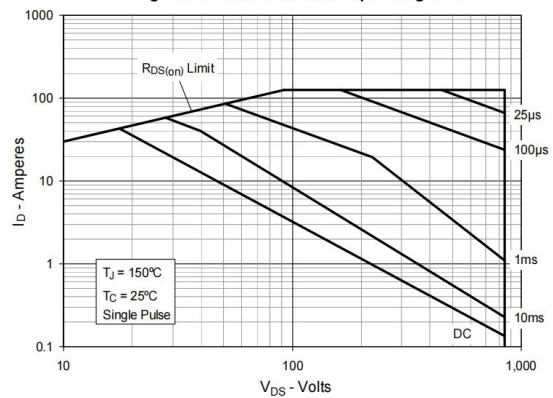
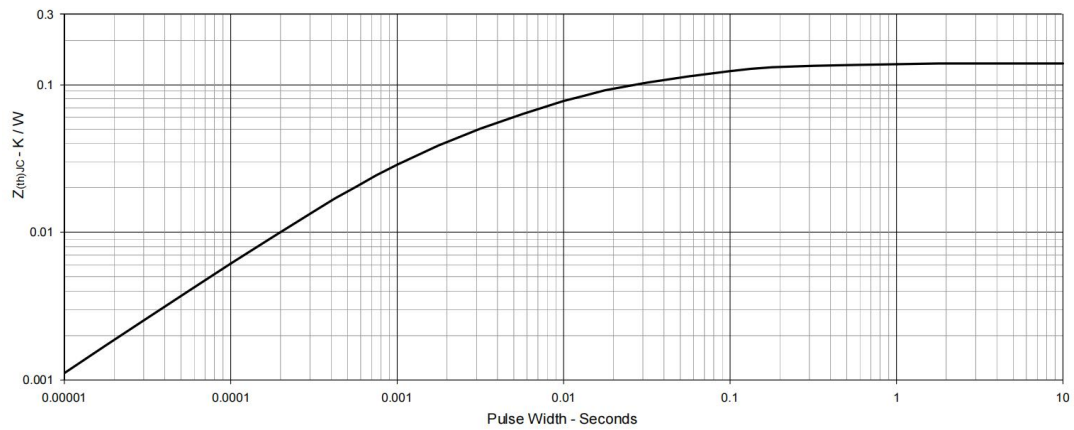


Fig. 15. Maximum Transient Thermal Impedance



Package outline dimension

