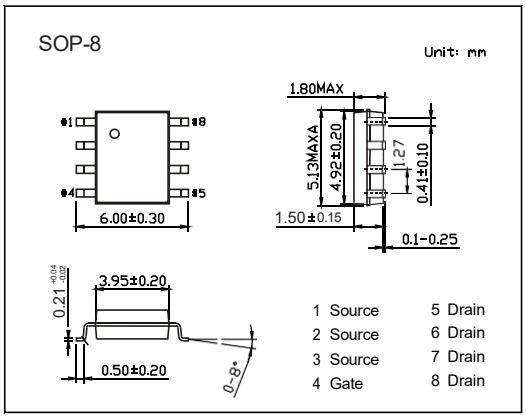
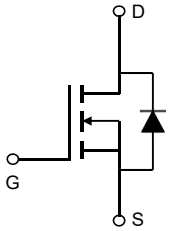


■ Features

- V_{DS} (V) = 20V
- I_D = 20 A (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 5.5mΩ (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 7mΩ (V_{GS} = 2.5V)



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	
Continuous Drain Current	TA=25℃	I_D	20	A
	TA=70℃		16	
Pulsed Drain Current		I_{DM}	140	
Avalanche Current		I_{AS},I_{AR}	57	
Avalanche energy	L=0.1mH	E_{AS},E_{AR}	162	mJ
Power Dissipation	TA=25℃	P_D	3.1	W
	TA=70℃		2	
Thermal Resistance.Junction- to-Ambient	t ≤ 10s	R_{thJA}	40	℃/W
	Steady-State		75	
Thermal Resistance.Junction- to-Lead		R_{thJL}	24	
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250 uA, V_{GS}=0V	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	uA
		V_{DS}=20V, V_{GS}=0V, T_J=55℃			5	
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±12V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=250uA	0.5		1.6	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=20A			5.5	mΩ
		V_{GS}=4.5V, I_D=20A T_J=125℃			7	
		V_{GS}=2.5V, I_D=18A			7	
On State Drain Current	$I_{D(ON)}$	V_{GS}=10V, V_{DS}=5V	140			A
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=20A		105		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=10V, f=1MHz	3080		4630	pF
Output Capacitance	C_{oss}		520		960	
Reverse Transfer Capacitance	C_{rss}		350		810	
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz	0.6		2.1	Ω
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=10V, I_D=20A	28		43	nC
Gate Source Charge	Q_{gs}		7		11	
Gate Drain Charge	Q_{gd}		7		17	
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=10V, V_{DS}=10V, R_L=0.5Ω, R_{GEN}=3Ω		7		ns
Turn-On Rise Time	t_r			8		
Turn-Off DelayTime	$t_{d(off)}$			70		
Turn-Off Fall Time	t_f			18		
Body Diode Reverse Recovery Time	t_{rr}	I_F= 20A, dI/dt= 500A/us	13		20	
Body Diode Reverse Recovery Charge	Q_{rr}		29		43	nC
Maximum Body-Diode Continuous Current	I_S				4	A
Diode Forward Voltage	V_{SD}	I_S=1A,V_{GS}=0V			1	V

Note : The static characteristics in Figures 1 to 6 are obtained using <300 μs pulses, duty cycle 0.5% max.

■ Marking

Marking	4402

■ Typical Characterisitics

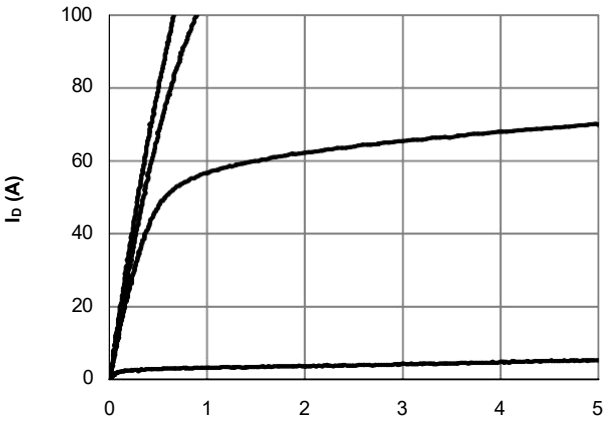


Fig 1: On-Region Characteristics (Note E)

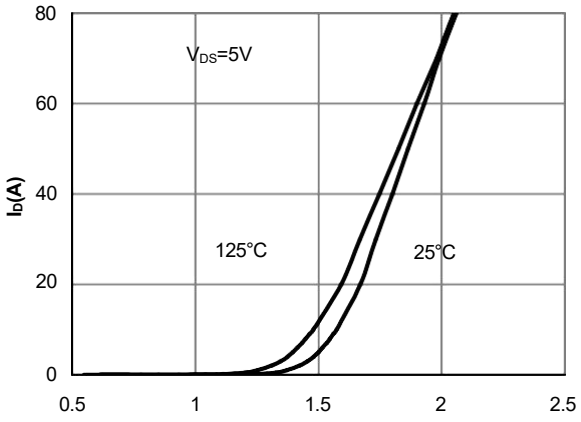


Figure 2: Transfer Characteristics (Note E)

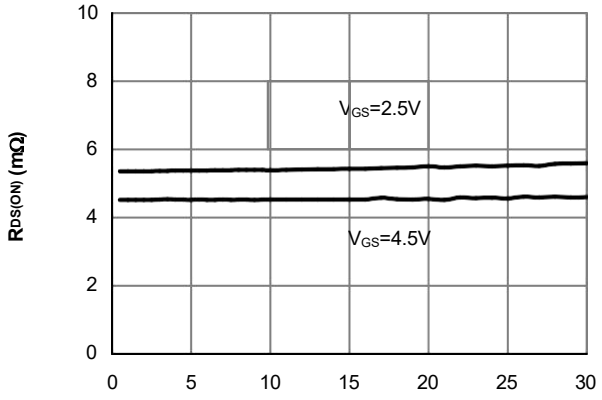


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

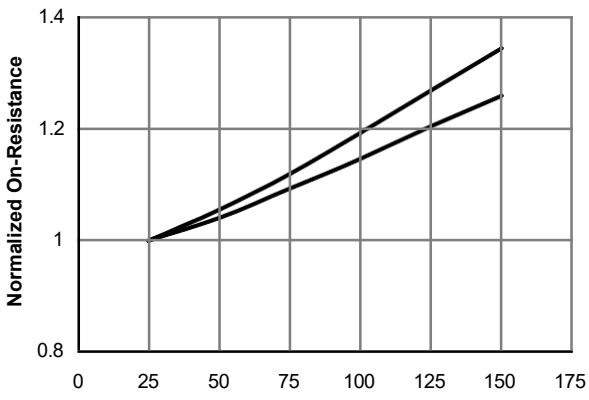


Figure 4: On-Resistance vs. Junction Temperature (Note E)

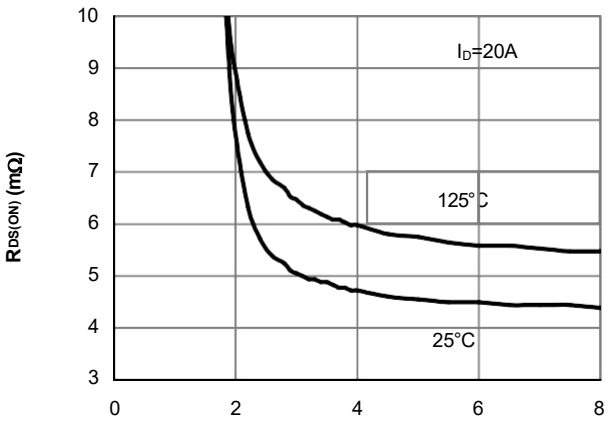


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

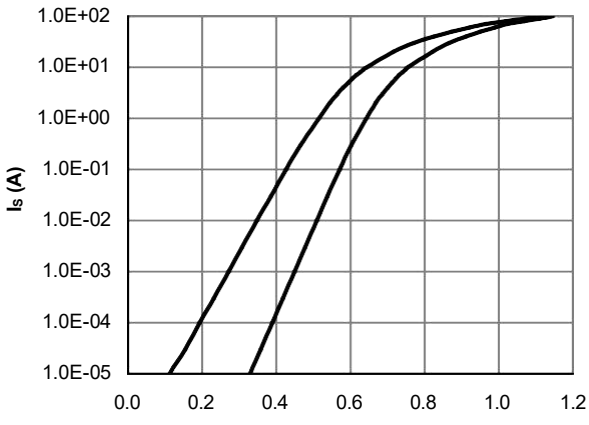


Figure 6: Body-Diode Characteristics (Note E)

■ Typical Characterisitics

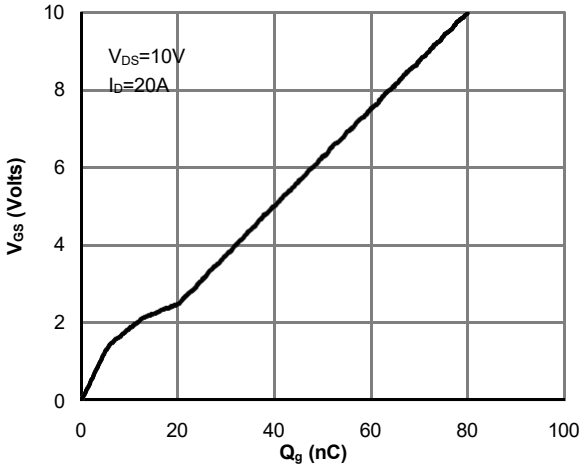


Figure 7: Gate-Charge Characteristics

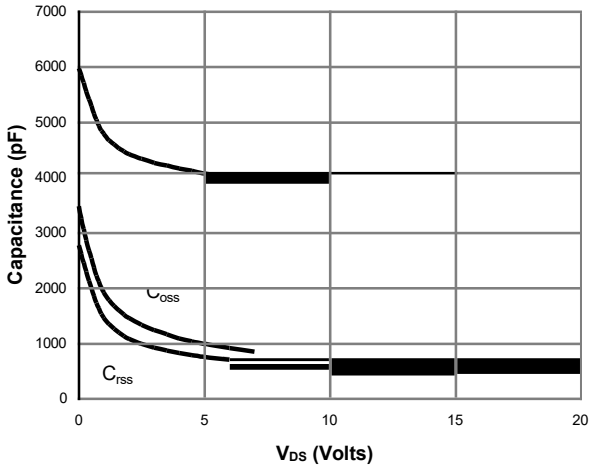


Figure 8: Capacitance Characteristics

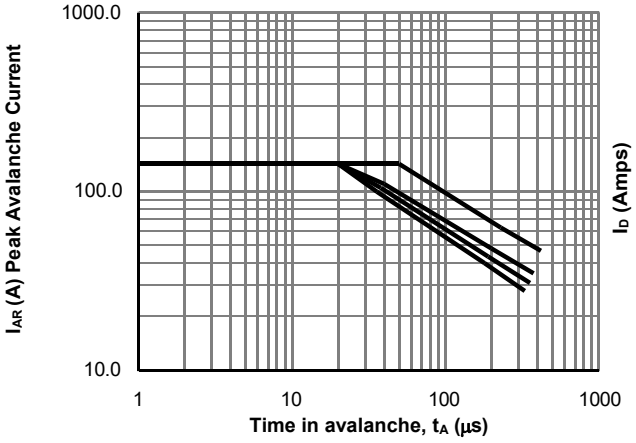
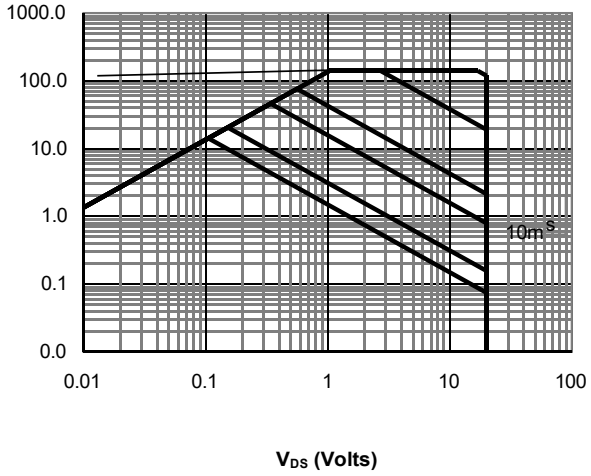


Figure 9: Single Pulse Avalanche capability (Note C)



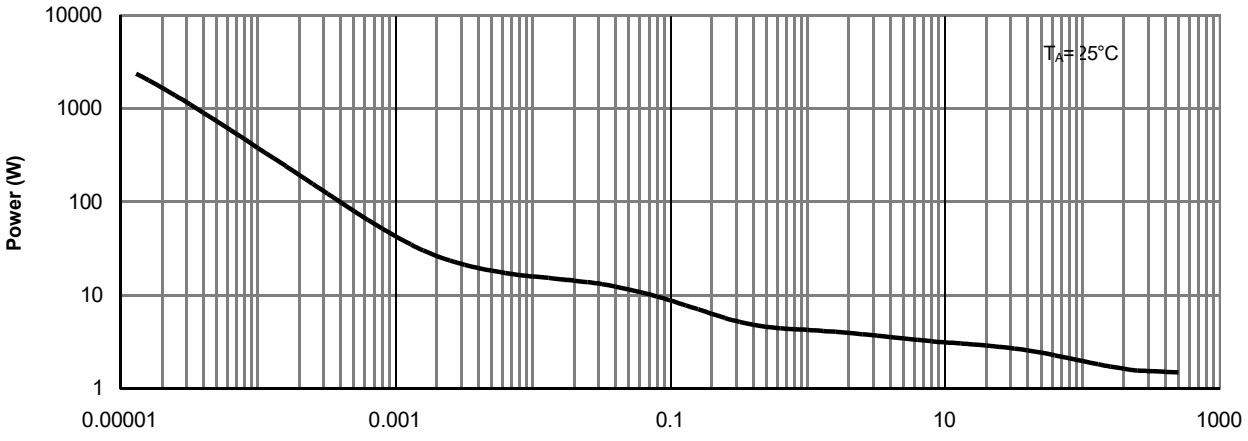


Figure 11: Single Pulse Power Rating Junction-to-Ambient (Note F)

■ Typical Characterisitics

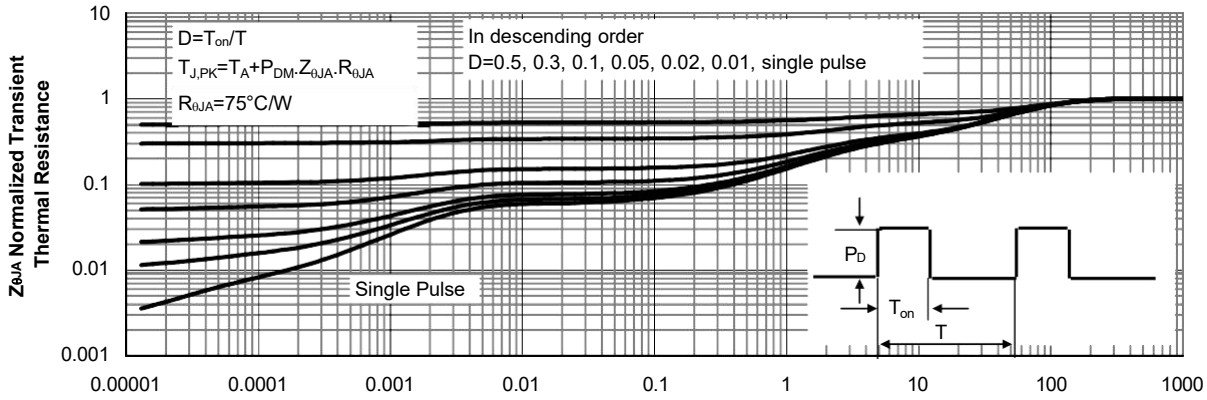


Figure 12: Normalized Maximum Transient Thermal Impedance (Note F)