

Electrical Characteristics (T_j = 25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV _{DSS}	30	-	-	V	V _{GS} =0, I _D =250uA
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS} / \Delta T_j$	-	0.03	-	V/°C	Reference to 25°C, I _D =1mA
Gate Threshold Voltage	V _{GS(th)}	1.0	-	3.0	V	V _{DS} =V _{GS} , I _D =250uA
Forward Transconductance	g _{fs}	-	25	-	S	V _{DS} =10V, I _D =10A
Gate-Source Leakage Current	I _{GSS}	-	-	±100	nA	V _{GS} = ±20V
Drain-Source Leakage Current(T _j =25°C)	I _{DSS}	-	-	1	uA	V _{DS} =30V, V _{GS} =0
Drain-Source Leakage Current(T _j =175°C)		-	-	250	uA	V _{DS} =24V, V _{GS} =0
Static Drain-Source On-Resistance ²	R _{DS(ON)}	-	-	12	mΩ	V _{GS} =10V, I _D =20A
		-	-	25		V _{GS} =4.5V, I _D =15A
Total Gate Charge ²	Q _g	-	11.6	19	nC	I _D =20A V _{DS} =24V V _{GS} =4.5V
Gate-Source Charge	Q _{gs}	-	3.9	-		
Gate-Drain ("Miller") Charge	Q _{gd}	-	7	-		
Turn-on Delay Time ²	T _{d(on)}	-	8.8	-	ns	V _{DS} =15V I _D =20A V _{GS} =10V R _G =3.3Ω R _D =0.75Ω
Rise Time	T _r	-	57.5	-		
Turn-off Delay Time	T _{d(off)}	-	18.5	-		
Fall Time	T _f	-	6.4	-		
Input Capacitance	C _{iss}	-	1135	1816	pF	V _{GS} =0V V _{DS} =25V f=1.0MHz
Output Capacitance	C _{oss}	-	200	-		
Reverse Transfer Capacitance	C _{rss}	-	135	-		

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage ²	V _{SD}	-	-	1.3	V	I _S =45A, V _{GS} =0V
Reverse Recovery Time ²	T _{rr}	-	23.3	-	ns	I _S =20A, V _{GS} =0V di/dt=100A/μs
Reverse Recovery Charge	Q _{rr}	-	16	-	nC	

Notes: 1. Pulse width limited by safe operating area.

2. Pulse width ≤ 300us, duty cycle ≤ 2%.

Characteristics Curve

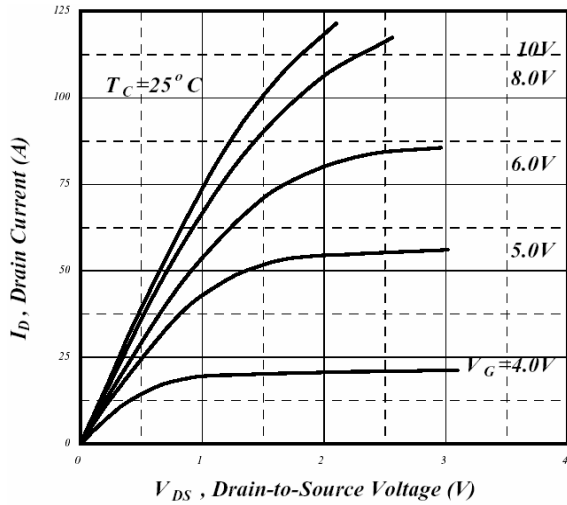


Fig 1. Typical Output Characteristics

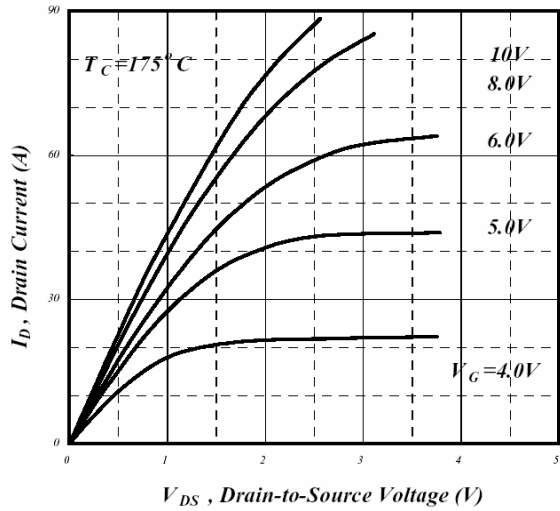


Fig 2. Typical Output Characteristics

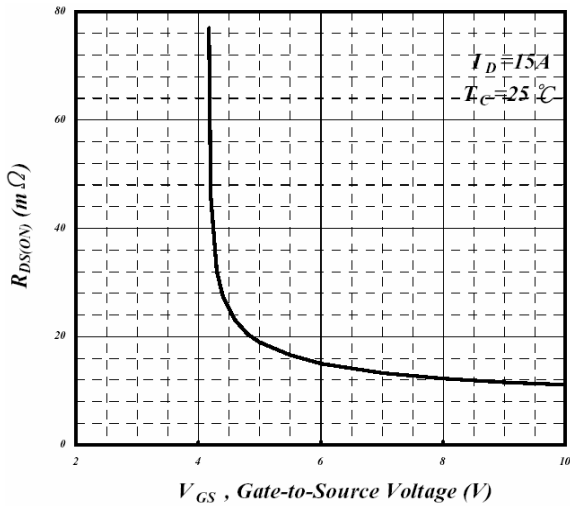


Fig 3. On-Resistance v.s. Gate Voltage

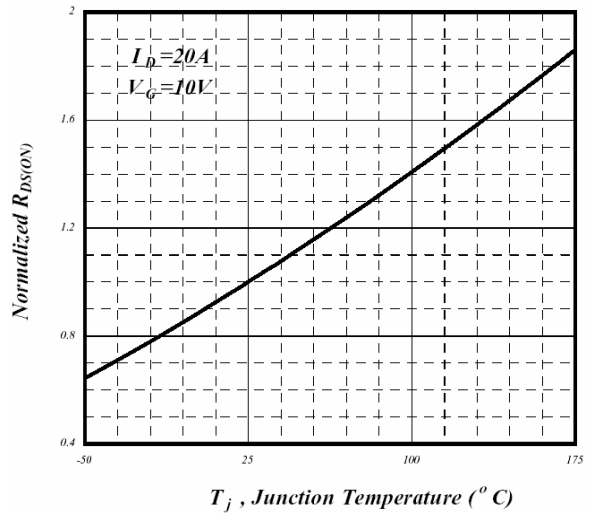


Fig 4. Normalized On-Resistance v.s. Junction Temperature

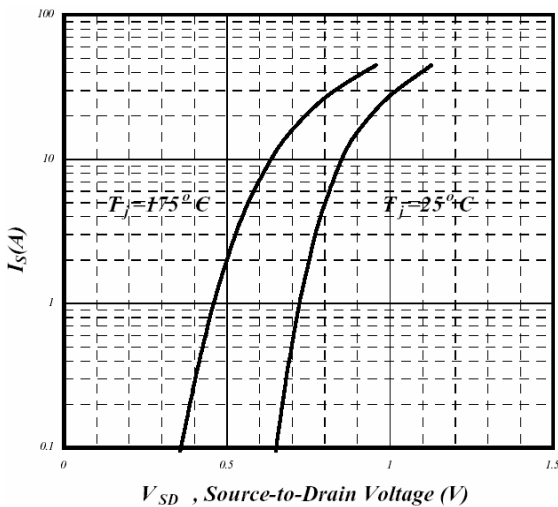


Fig 5. Forward Characteristics of Reverse Diode

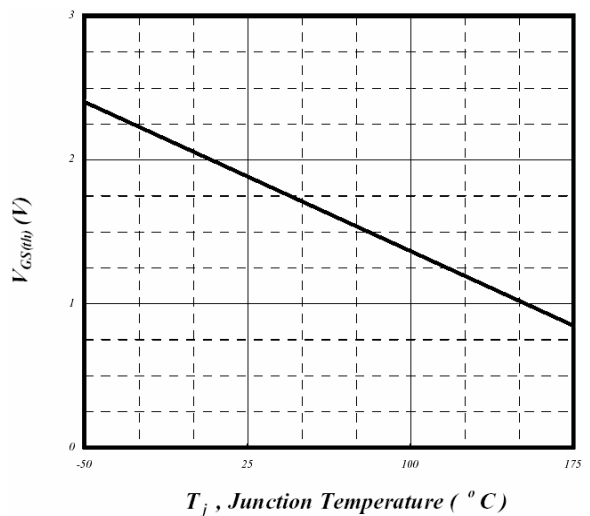


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

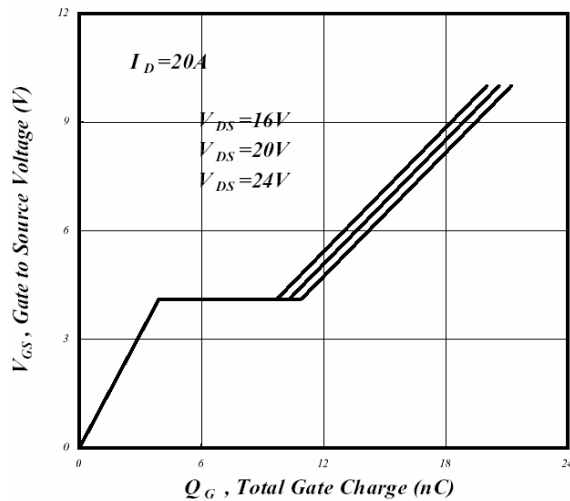


Fig 7. Gate Charge Characteristics

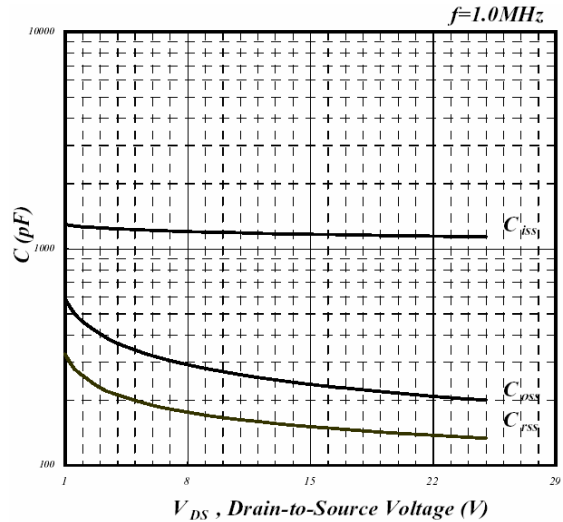


Fig 8. Typical Capacitance Characteristics

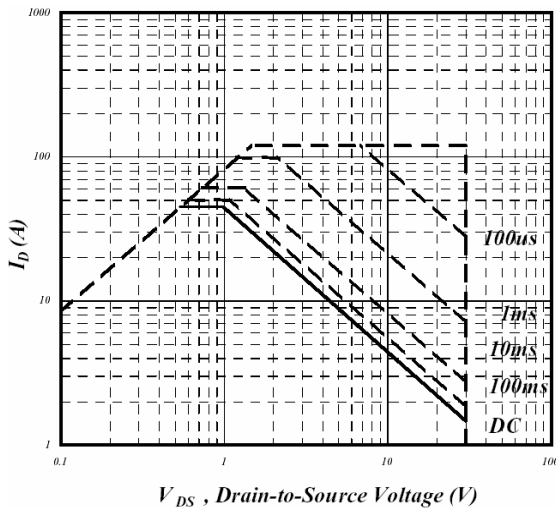


Fig 9. Maximum Safe Operating Area

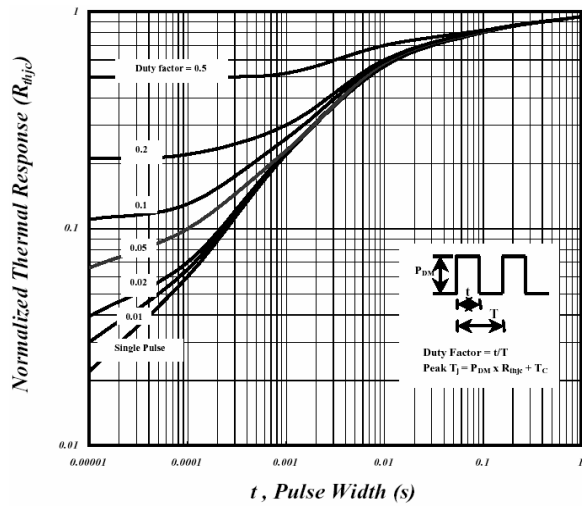


Fig 10. Effective Transient Thermal Impedance

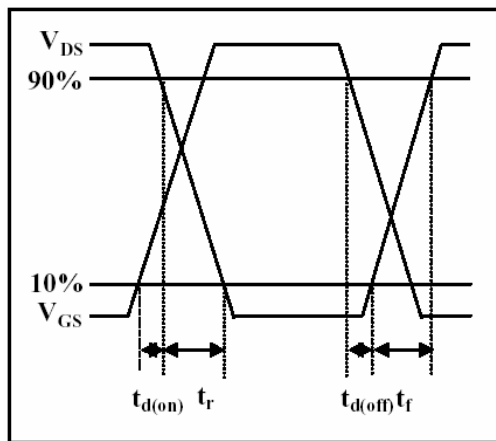


Fig 11. Switching Time Waveform

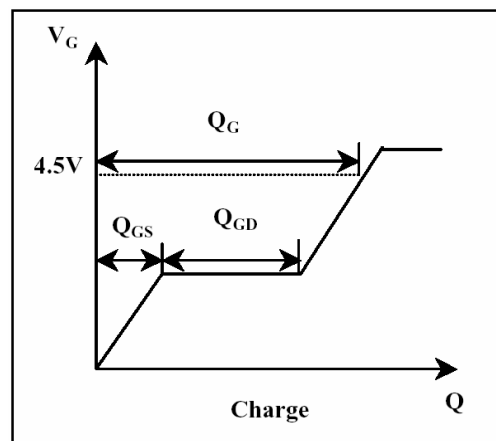


Fig 12. Gate Charge Waveform

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