
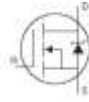


IRF3205

Electrical Characteristics Ta = 25

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	V _{DSS}	V _{GS} = 0V, I _D = 250μA	55			V
Static Drain-to-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 62A*1			8.0	m
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2.0		4.0	V
Drain-to-Source Leakage Current	I _{DSS}	V _{DS} = 55V, V _{GS} = 0V			25	μA
		V _{DS} = 44V, V _{GS} = 0V, T _J = 150			250	
Gate-to-Source Forward Leakage	I _{GSS}	V _{GS} = 20V			100	nA
Gate-to-Source Reverse Leakage		V _{GS} = -20V			-100	
Total Gate Charge	Q _g	I _D = 62A			146	nC
Gate-to-Source Charge	Q _{gs}	V _{DS} = 44V			35	
Gate-to-Drain ("Miller") Charge	Q _{gd}	V _{GS} = 10V,*1			54	
Turn-On Delay Time	t _{d(on)}	V _{DD} = 28V		14		ns
Rise Time	t _r	I _D = 62A		101		
Turn-Off Delay Time	t _{d(off)}	R _G = 4.5		50		
Fall Time	t _f	V _{GS} =10V *1		65		
Internal Drain Inductance	L _D	Between lead, 6mm (0.25in.) from package and center of die contact		4.5		nH
Internal Source Inductance	L _S			7.5		
Input Capacitance	C _{iss}	V _{GS} = 0V		3247		pF
Output Capacitance	C _{oss}	V _{DS} = 25V		781		
Reverse Transfer Capacitance	C _{rss}	f = 1.0MHz		211		
Reverse Recovery Time	t _{rr}	T _J = 25 , I _F = 62A		69	104	ns
Reverse RecoveryCharge	Q _{rr}	di/dt = 100A/μs*1		143	215	nC
Forward Turn-On Time	t _{on}	Intrinsic turn-on time is negligible (turn-on is dominated by L _s +L _D)				
Continuous Source Current (Body Diode)	I _S	MOSFET symbol showing the integral reverse p-n junction diode.			110	A
Pulsed Source Current (Body Diode) *2	I _{SM}				390	
Diode Forward Voltage	V _{SD}	T _J = 25 , I _S = 62A, V _{GS} = 0V*1			1.3	V

*1 Pulse width 400μs; duty cycle 2%.

*2 Repetitive rating; pulse width limited by max. junction temperature.

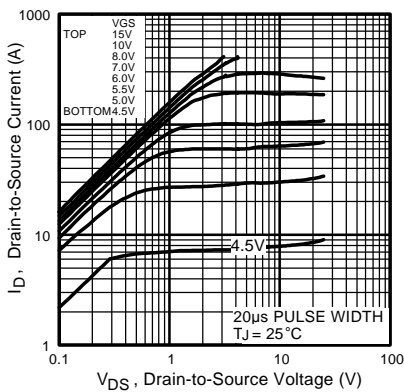


Fig 1. Typical Output Characteristics

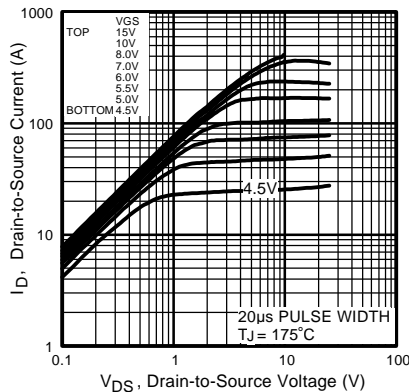


Fig 2. Typical Output Characteristics

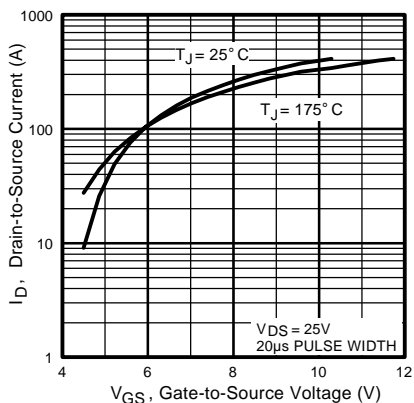


Fig 3. Typical Transfer Characteristics

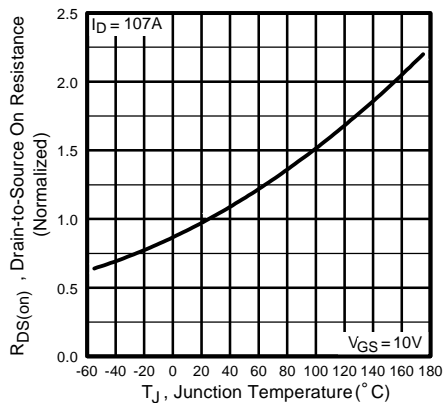


Fig 4. Normalized On-Resistance Vs. Temperature

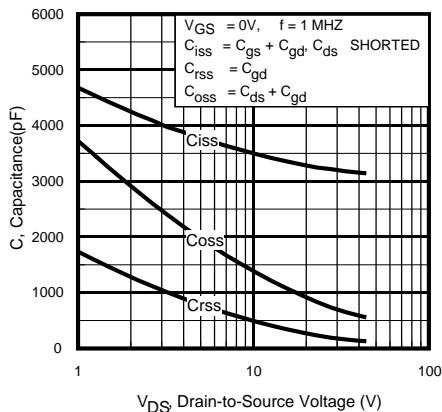


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

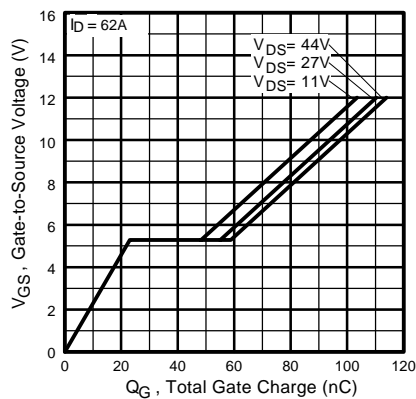


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

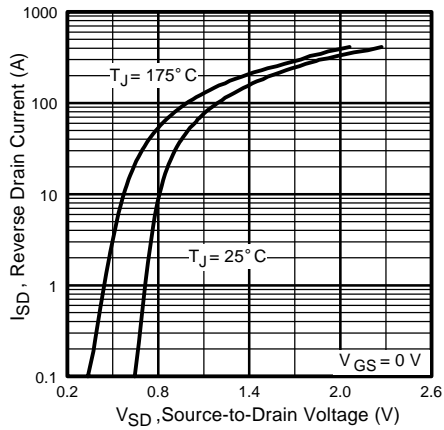


Fig 7. Typical Source-Drain Diode Forward Voltage

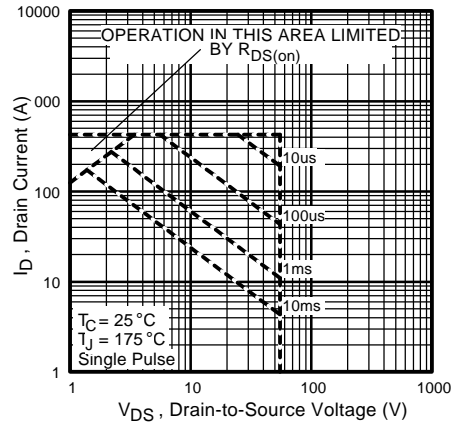


Fig 8. Maximum Safe Operating Area

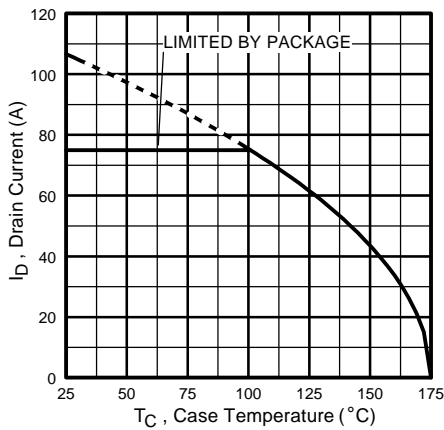


Fig 9. Maximum Drain Current Vs. Case Temperature

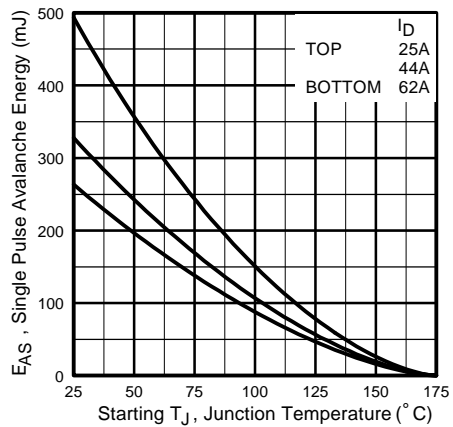


Fig 12c. Maximum Avalanche Energy Vs. Drain Current

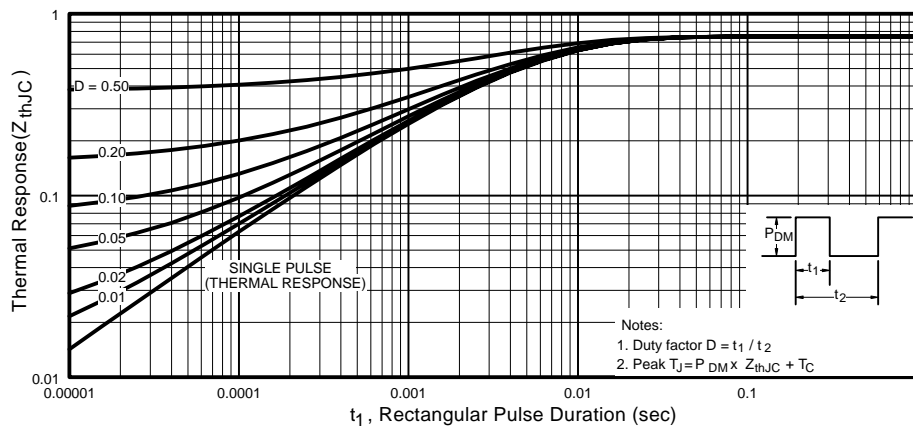


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Case