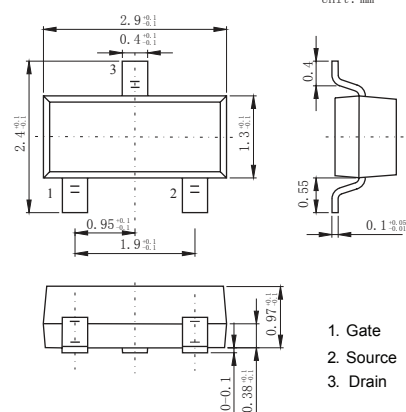


■ Features

- $V_{DS} (V) = 60V$
- $R_{DS(ON)} < 92m\Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 116m\Omega$ ($V_{GS} = 4.5V$)

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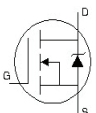


■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 16	
Continuous Drain Current	I_D	2.7	A
		2.1	
Pulsed Drain Current	I_{DM}	11	
Power Dissipation	P_D	1.25	W
		0.8	
Thermal Resistance. Junction- to-Ambient ^{*1}	R_{thJA}	100	$^\circ C/W$
Thermal Resistance. Junction- to-Ambient ($t < 10s$)		99	
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

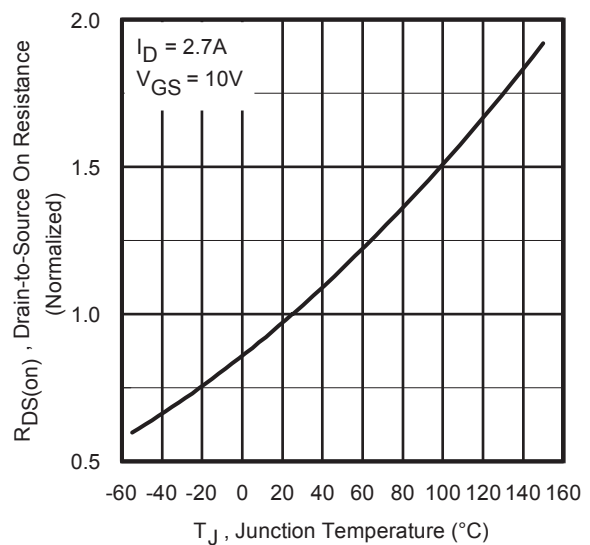
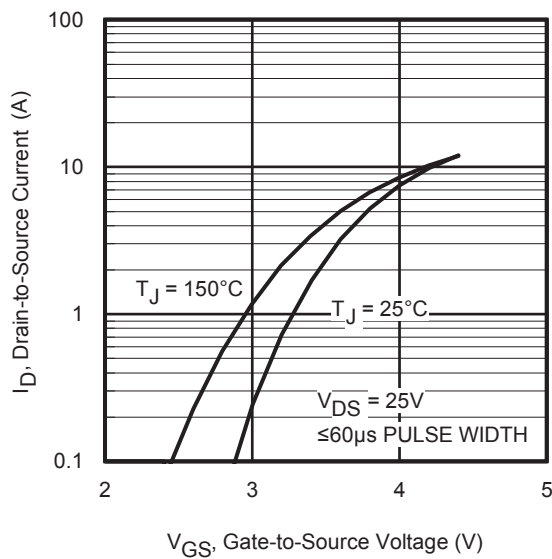
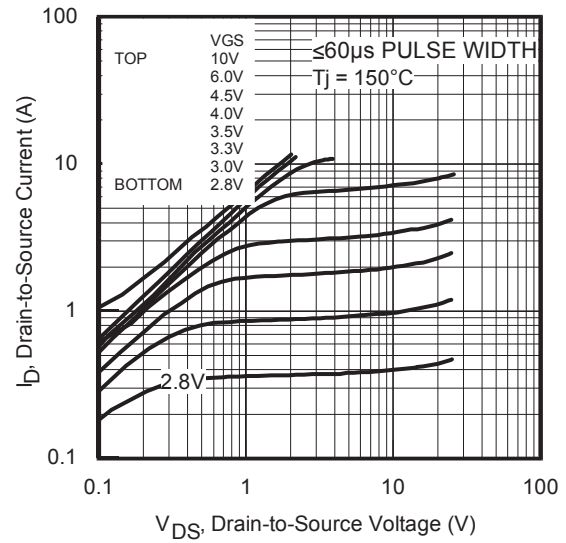
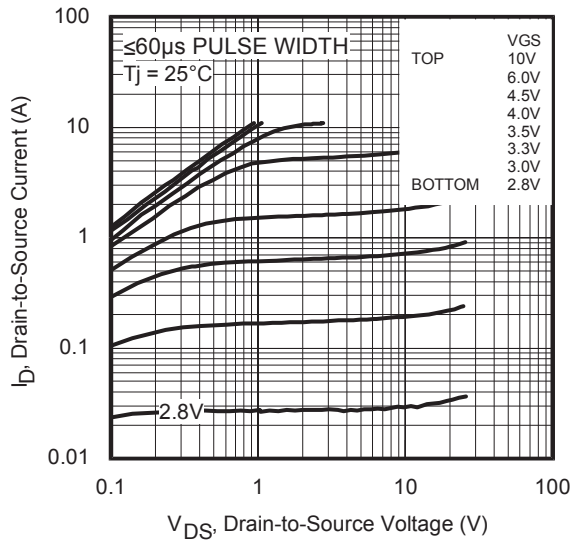
*1: Surface mounted on 1 in square Cu board.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D = 250 \mu\text{A}$, $V_{GS} = 0\text{V}$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 60\text{V}$, $V_{GS} = 0\text{V}$			20	μA
		$V_{DS} = 60\text{V}$, $V_{GS} = 0\text{V}$, $T_J = 125^\circ\text{C}$			250	
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0\text{V}$, $V_{GS} = \pm 16\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 25 \mu\text{A}$	1.0		2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 4.5\text{V}$, $I_D = 2.2\text{A}^{*2}$			116	m Ω
		$V_{GS} = 10\text{V}$, $I_D = 2.7\text{A}^{*2}$			92	
Forward Transconductance	g_{FS}	$V_{DS} = 25\text{V}$, $I_D = 2.7\text{A}$	7.6			S
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = 25\text{V}$, $f = 1\text{MHz}$		290		pF
Output Capacitance	C_{oss}			37		
Reverse Transfer Capacitance	C_{rss}			21		
Gate Resistance	R_g			1.6		Ω
Total Gate Charge	Q_g	$V_{GS} = 4.5\text{V}$, $V_{DS} = 30\text{V}$, $I_D = 2.7\text{A}^{*2}$		2.6		nC
Gate Source Charge	Q_{gs}			0.7		
Gate Drain Charge	Q_{gd}			1.3		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS} = 4.5\text{V}$, $V_{DD} = 30\text{V}$, $I_D = 1.0\text{A}$, $R_G = 6.8 \Omega^{*2}$		5.4		ns
Turn-On Rise Time	t_r			6.3		
Turn-Off DelayTime	$t_{d(off)}$			6.8		
Turn-Off Fall Time	t_f			4.2		
Body Diode Reverse Recovery Time	t_{rr}	$V_R = 30\text{V}$, $I_F = 1.6\text{A}$, $di/dt = 100\text{A}/\mu\text{s}^{*2}$			21	nC
Body Diode Reverse Recovery Charge	Q_{rr}				20	
Maximum Body-Diode Continuous Current	I_S	MOSFET symbol showing the integral reverse p-n junction diode. 			1.6	A
Maximum Body-Diode Pulsed Current ^{*1}	I_{SM}				11	
Diode Forward Voltage	V_{SD}	$I_S = 2.7\text{A}$, $V_{GS} = 0\text{V}^{*2}$			1.3	V

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

*2: Pulse width $\leq 400\mu\text{s}$; duty cycle $\leq 2\%$.



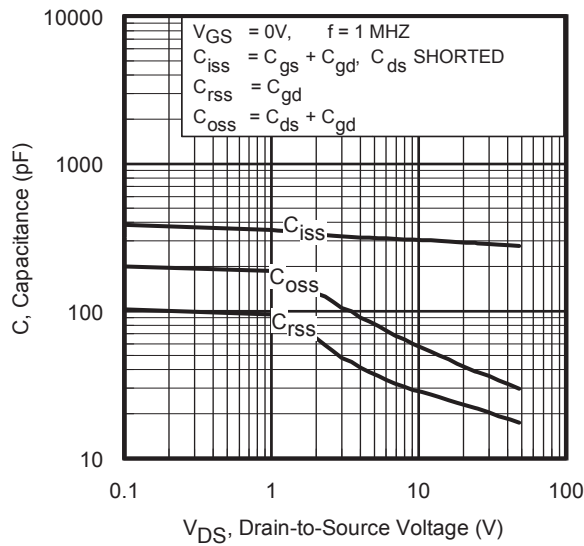


Fig 5. Typical Capacitance vs. Drain-to-Source Voltage

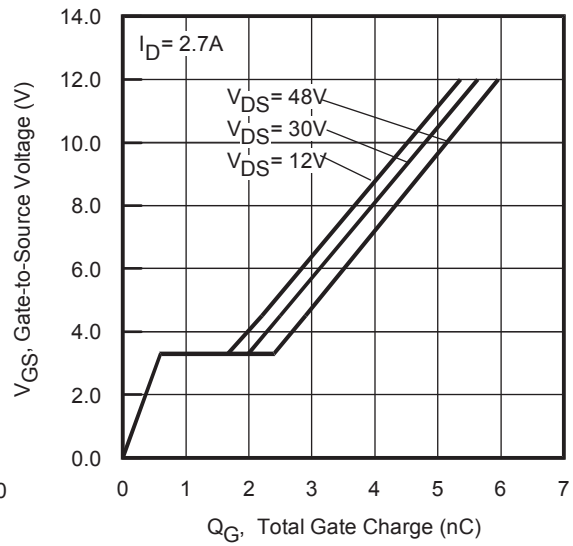


Fig 6. Typical Gate Charge vs. Gate-to-Source Voltage

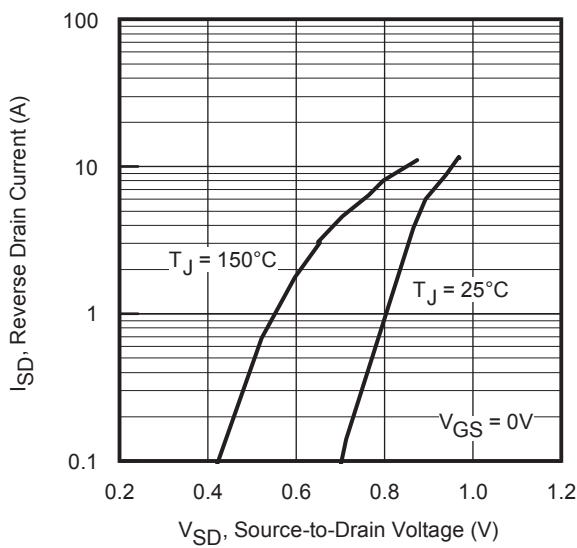


Fig 7. Typical Source-Drain Diode Forward Voltage

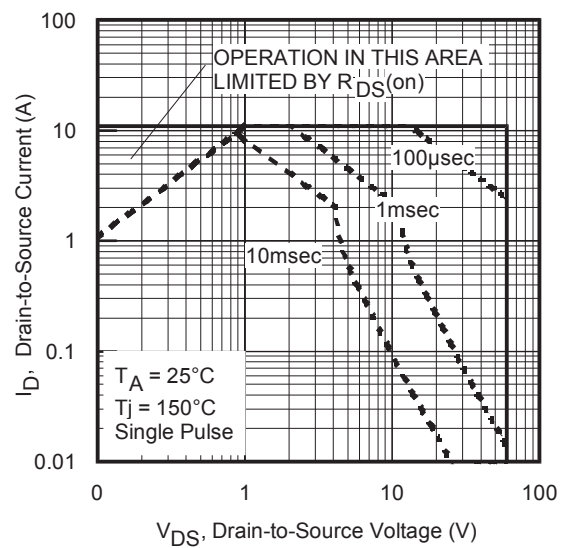


Fig 8. Maximum Safe Operating Area

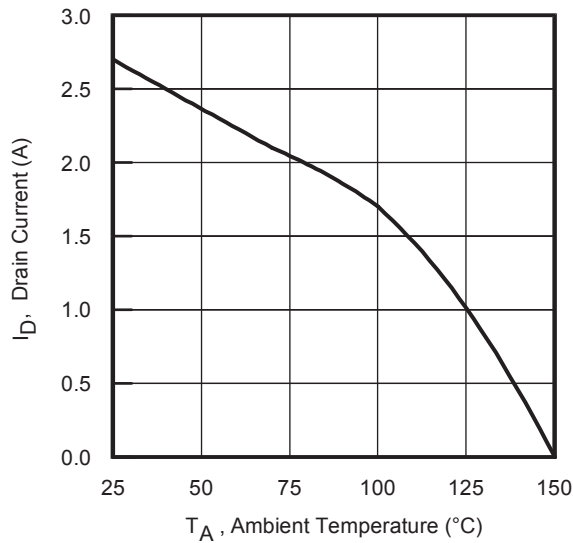


Fig 9. Maximum Drain Current vs. Ambient Temperature

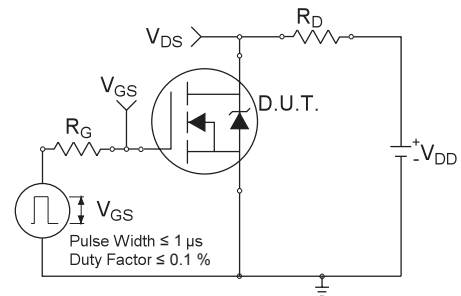


Fig 10a. Switching Time Test Circuit

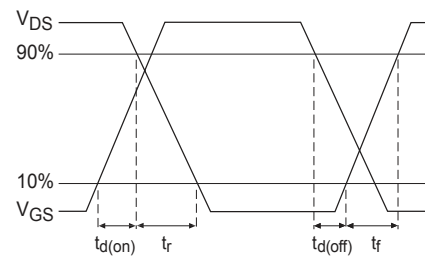


Fig 10b. Switching Time Waveforms

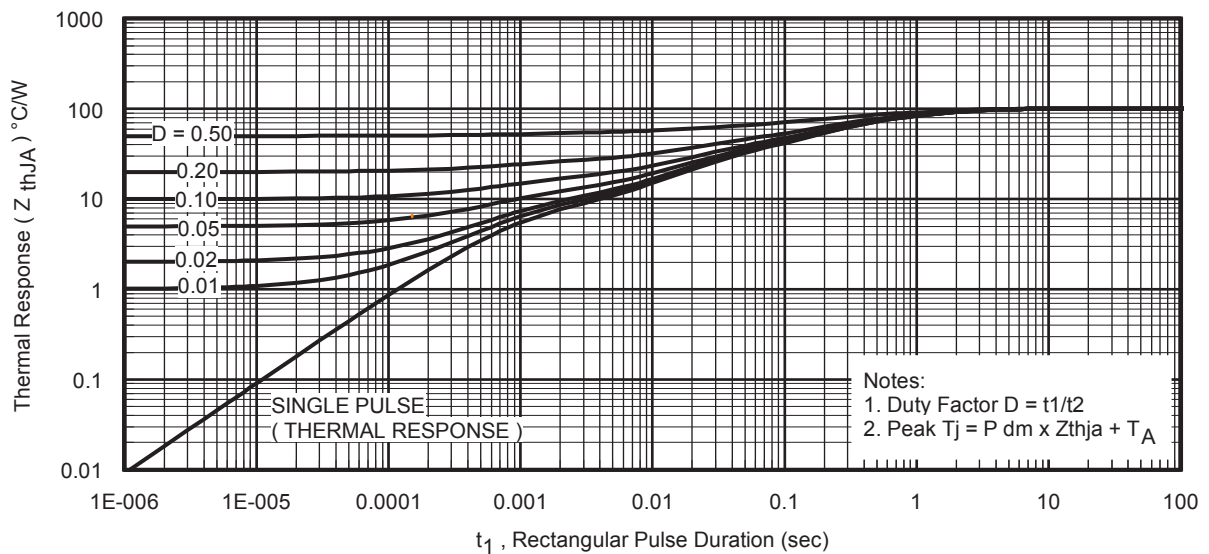


Fig 11. Typical Effective Transient Thermal Impedance, Junction-to-Ambient

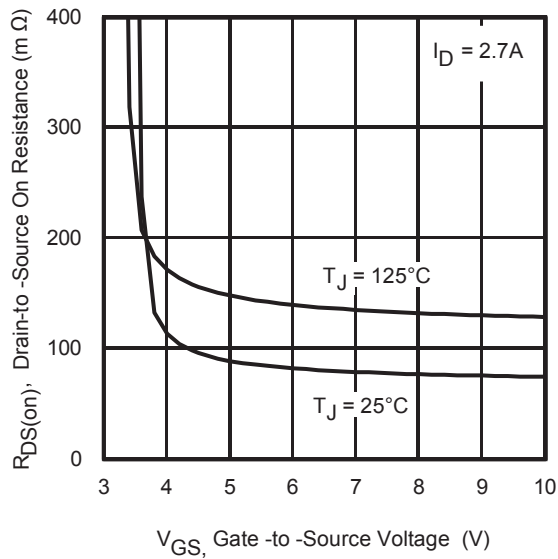


Fig 12. Typical On-Resistance vs. Gate Voltage

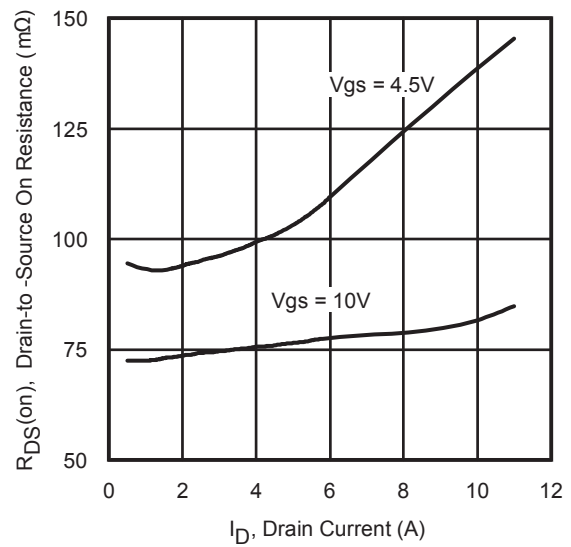


Fig 13. Typical On-Resistance vs. Drain Current

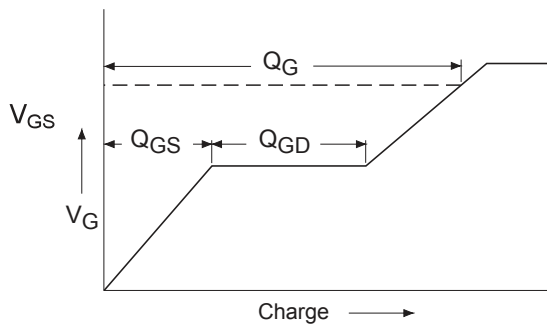


Fig 14a. Basic Gate Charge Waveform

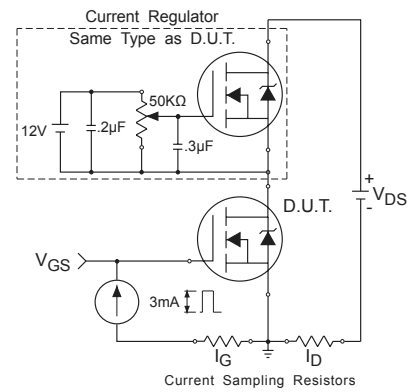


Fig 14b. Gate Charge Test Circuit

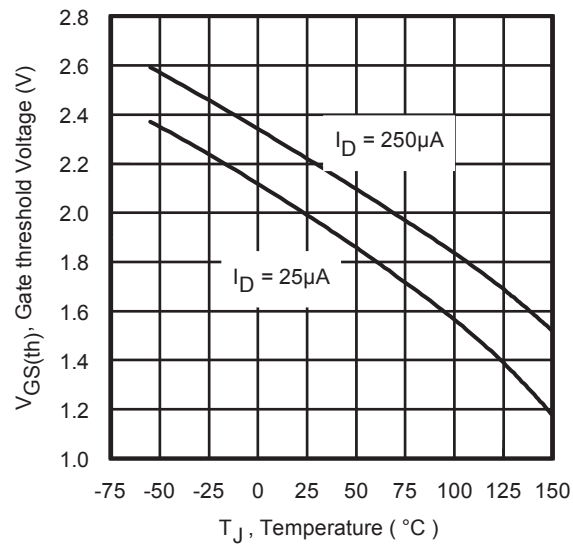


Fig 15. Typical Threshold Voltage vs. Junction Temperature

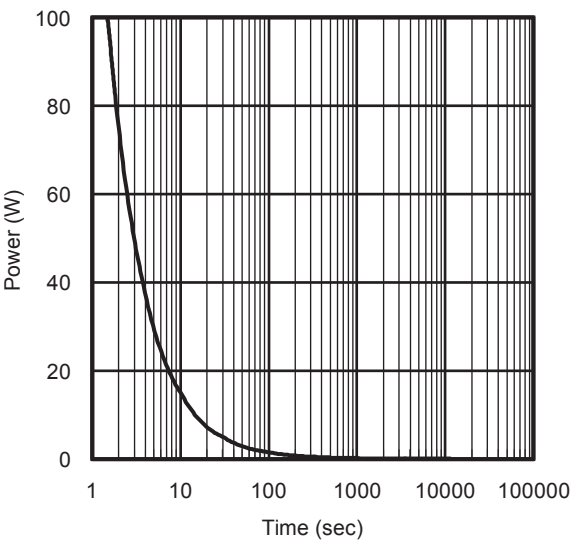


Fig 16. Typical Power vs. Time