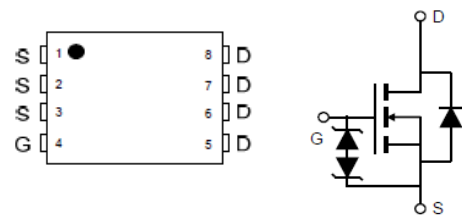
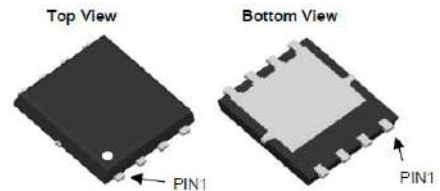


PRIMARY CHARACTERISTICS

BV _{DSS}	R _{DS(on)} MAX	I _D
20V	2.6mΩ@V _{GS} =4.5V	100A
	3.6mΩ@V _{GS} =2.5V	

SCHEMATIC DIAGRAM

PR-PAK PACKAGE



GENERAL DESCRIPTION

- Notebook AC-in load switch
- Battery protection charge/discharge
- ESD Protected

MECHANICAL DATA

- Case : Molded plastic,PR-PAK
- Polarity : Shown above
- Terminals :Plated terminals,
solderable per
MIL-STD-750,Method 2026
- Epoxy : UL94-V0 rated flame
retardant

Absolute Maximum Ratings @T_A=25°C unless otherwise noted

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	20	V
Gate-Source Voltage		V_{GSS}	± 12	V
Drain Current (Continuous) *C	$T_C=25^{\circ}C$	I_D	100	A
	$T_C=100^{\circ}C$		84	
Drain Current (Pulse) *B		I_{DM}	400	A
Power Dissipation	$T_C=25^{\circ}C$	P_D	69	W
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	$^{\circ}C$

Thermal Resistance Ratings

Parameter		Symbol	Maximum	Unit
Thermal Resistance Junction-ambient *A	t ≤ 10s	R _{thJA}	24	°C/W
Thermal Resistance Junction-case *A	Steady State	R _{thJC}	1.8	



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Electrical Characteristics @T_A=25°C unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static*D						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	20	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V	--	--	1	μA
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _{DS} = 250μA	0.4	--	1	V
Gate Leakage Current	I _{GSS}	V _{GS} = ±10V, V _{DS} =0V	--	--	±10	μA
Drain-Source On-state Resistance	R _{DS(on)}	V _{GS} = 4.5V, I _D = 15A	--	2.0	2.6	mΩ
	R _{DS(on)}	V _{GS} = 2.5V, I _D = 10A	--	2.7	3.6	mΩ
Diode Forward Voltage	V _{SD}	I _{SD} = 1A , V _{GS} =0V	--	--	1.2	V
Diode Forward Current °C	I _S	T _C =25°C	--	--	57.5	A
Switching						
Total Gate Charge	Q _g	V _{DS} = 10V, I _D = 15A, V _{GS} = 4.5V	--	25	--	nC
Gate-Source Charge	Q _{gs}		--	7.4	--	nC
Gate-Drain Charge	Q _{gd}		--	5.6	--	nC
Turn-on Delay Time	t _{d (on)}	V _{GS} = 10V, V _{DS} = 4.5V, I _D = 10A , R _G = 1Ω	--	37	--	ns
Turn-on Rise Time	t _r		--	18	--	ns
Turn-off Delay Time	t _{d(off)}		--	74	--	ns
Turn-Off Fall Time	t _f		--	33	--	ns
Dynamic						
Input Capacitance	C _{iSS}	V _{DS} = 10V, V _{GS} = 0V, f = 1.0MHz	--	3680	--	pF
Output Capacitance	C _{oSS}		--	750	--	pF
Reverse Transfer Capacitance	C _{rSS}		--	210	--	pF

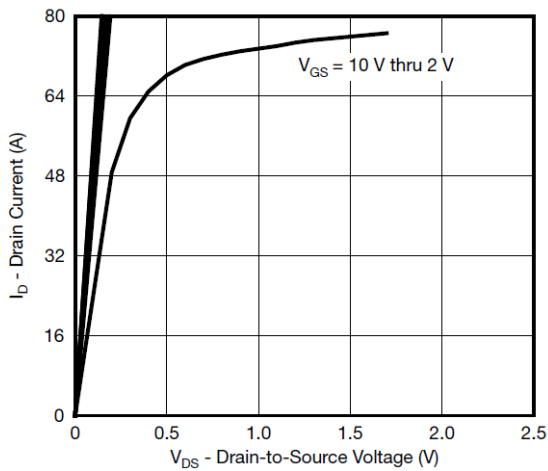
A: The value of R_{θJA} is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A=25°C. The value in any given application depends on the user's specific board design.

B: Repetitive rating, pulse width limited by junction temperature.

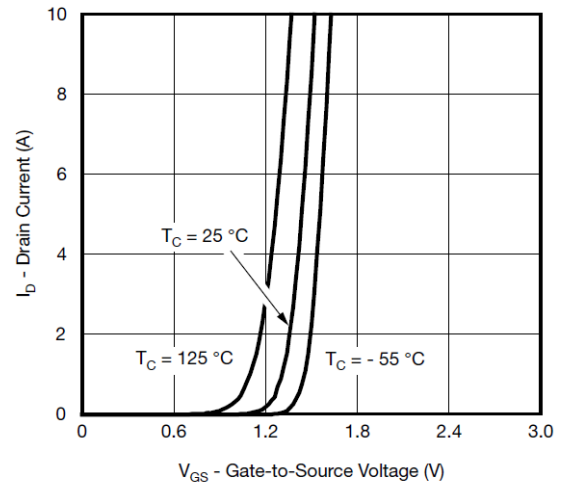
C: The current rating is based on the t_s 10s junction to ambient thermal resistance rating, Package limited 100A.

D: Pulse Test: Pulse Width ≤ 300μs, Duty Cycles ≤ 2%.

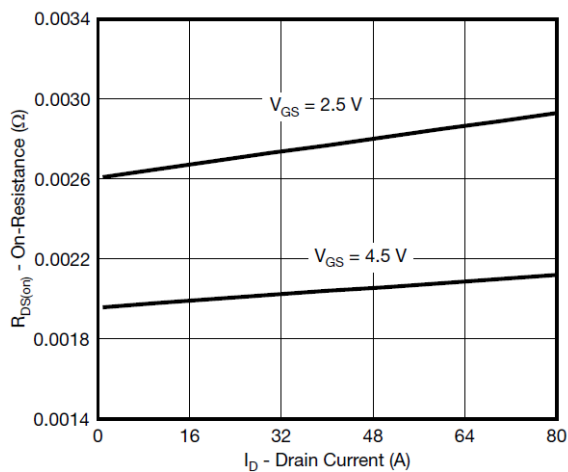
Typical Performance Characteristics (TJ = 25 °C, unless otherwise noted)



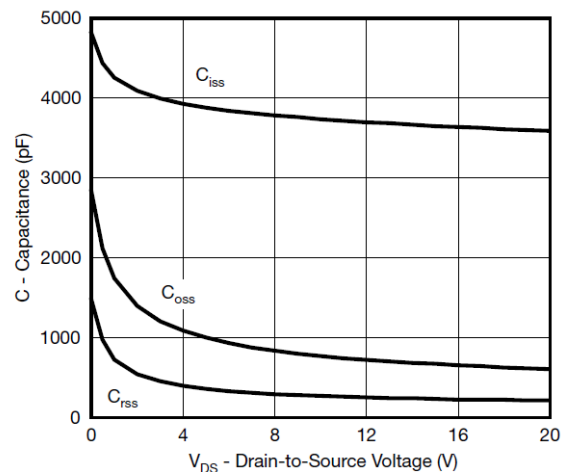
Output Characteristics



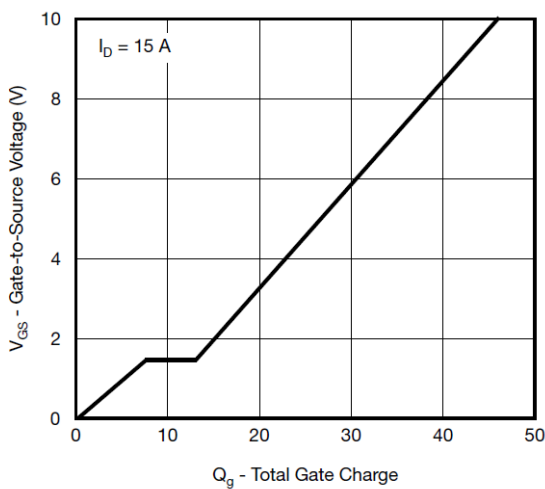
Transfer Characteristics



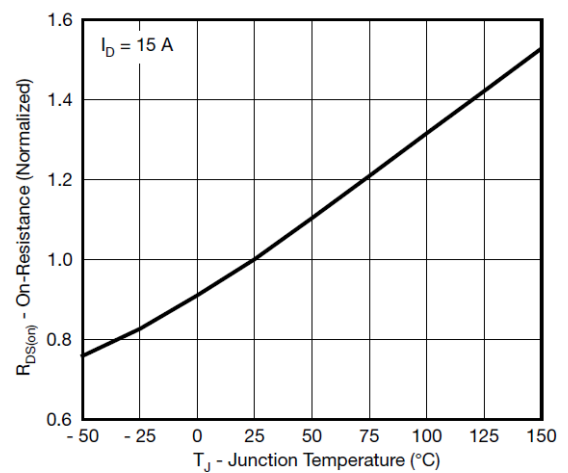
On-Resistance vs. Drain Current and Gate Voltage



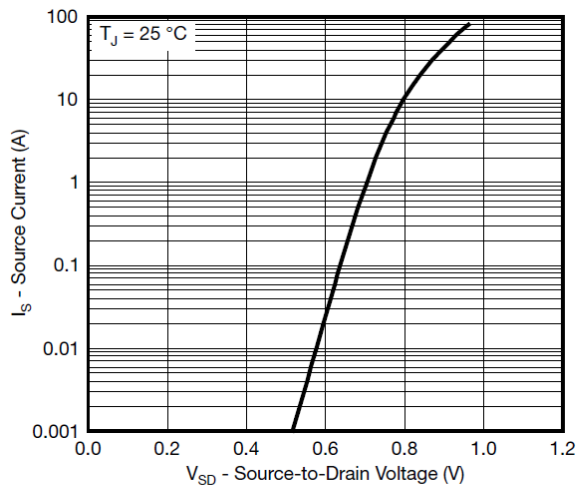
Capacitance



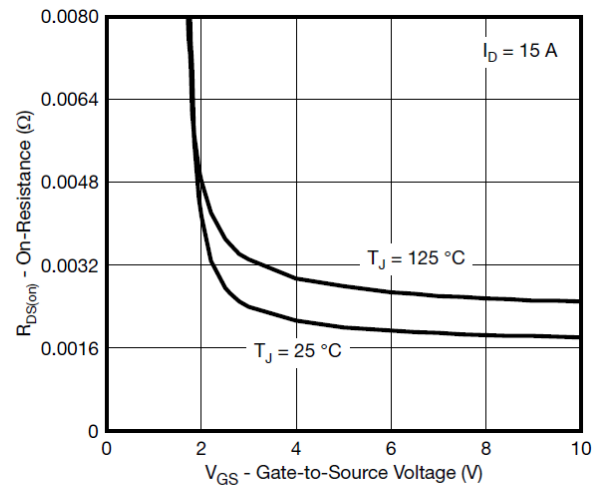
Gate Charge



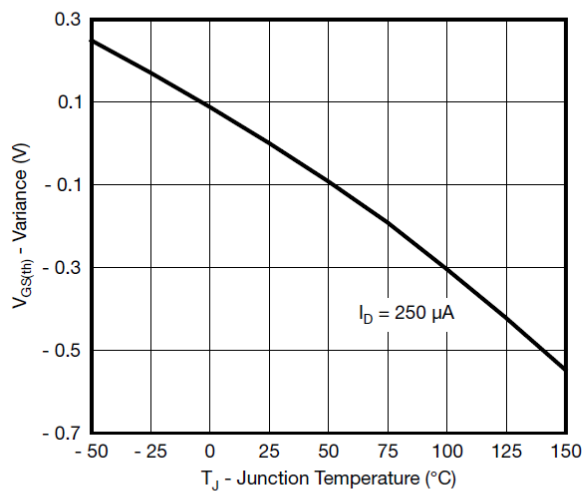
On-Resistance vs. Junction Temperature



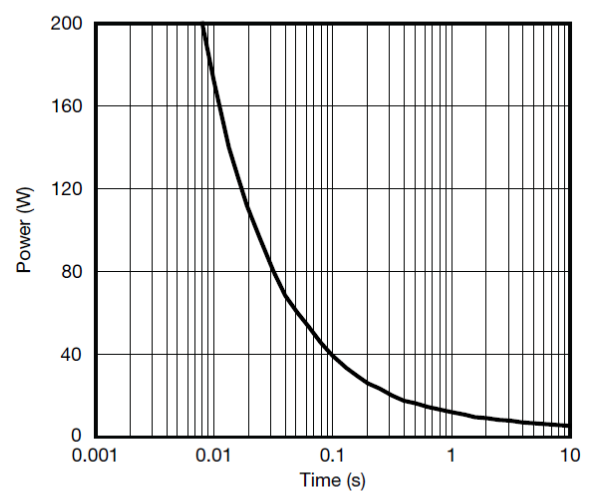
Source-Drain Diode Forward Voltage



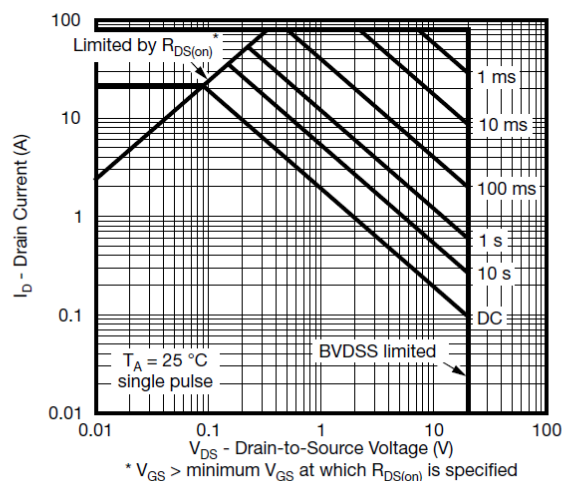
On-Resistance vs. Gate-to-Source Voltage



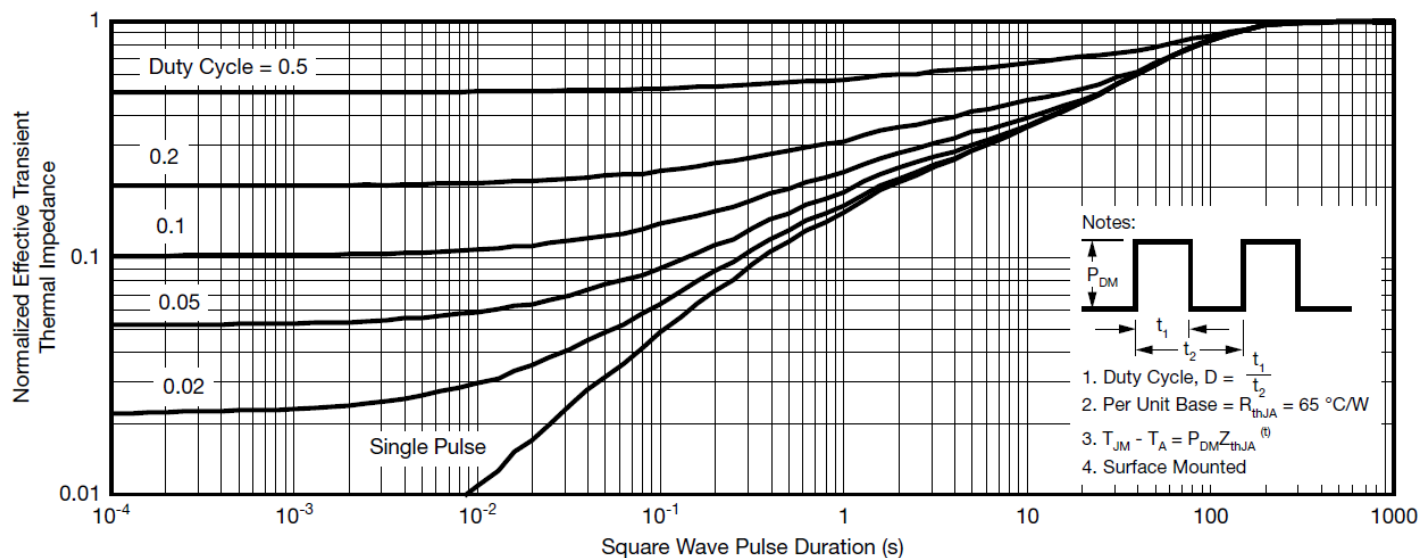
Threshold Voltage



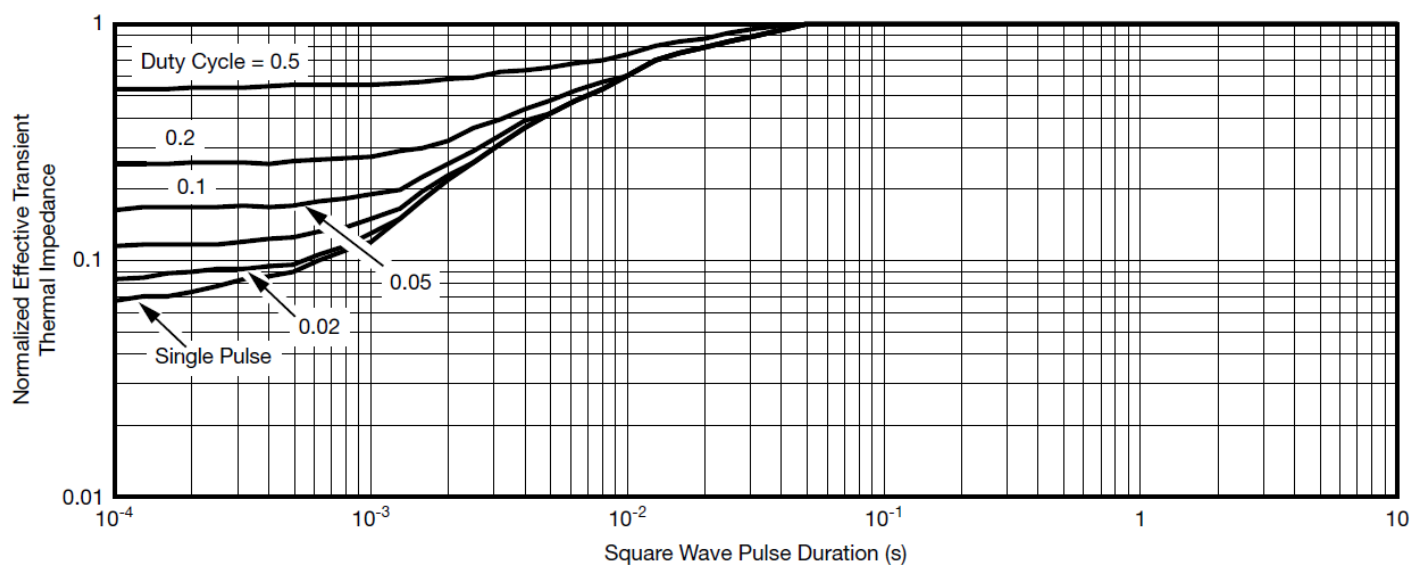
Single Pulse Power, Junction-to-Ambient



Safe Operating Area, Junction-to-Ambient



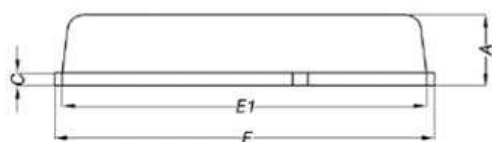
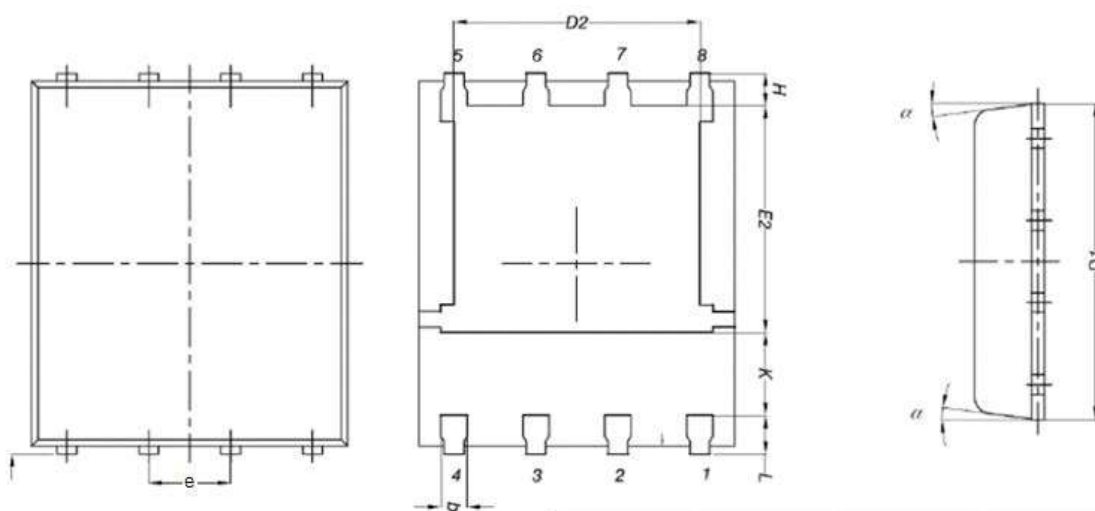
Normalized Thermal Transient Impedance, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Case

Outline Drawing

PR-PAK(M)



<i>DIM</i>	<i>MILLIMETERS</i>		
	<i>MIN.</i>	<i>NOM.</i>	<i>MAX.</i>
<i>A</i>	0.8	--	1.1
<i>b</i>	0.2	--	0.51
<i>C</i>	0.15	--	0.35
<i>D1</i>	4.8	--	5.3
<i>D2</i>	3.61	--	4.15
<i>E</i>	5.85	--	6.3
<i>E1</i>	5.45	--	6
<i>E2</i>	3.3	--	4.2
<i>e</i>	--	1.27	--
<i>H</i>	0.41	--	0.71
<i>K</i>	1.1	--	1.5
<i>L</i>	0.45	--	0.74
<i>a</i>	0°	--	12°

Rev.C

Ordering Information:

Device PN	Marking ⁽⁴⁾	Packing
SPR20N100EX-T ⁽¹⁾ H ⁽²⁾ -WS ⁽³⁾	7206	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) RoHS product for packing code suffix "G", Halogen free product for packing code suffix "H" .

(3) WS : Willas brand abbreviation, Label Type does not display

(4) There may be additional marking, which relates to the lot trace code information (data code and vendor code), the logo or the environmental category on the device

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