SM4805PRL

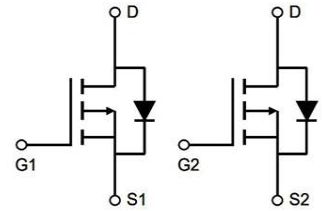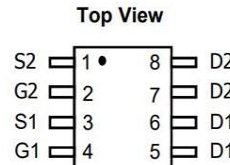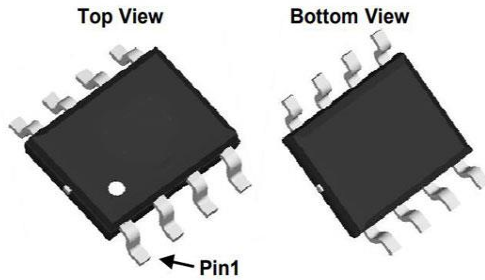## -30V /-9A Dual 2P Power MOSFET

General Description

-30V /-9A Dual 2P Power MOSFET

Very low on-resistance RDS(on) @ VGS=4.5 V

Pb-free lead plating; RoHS compliant

V_{DS}	-30	V
$R_{DS(on)}$,TYP@VGS=10V	26	mΩ
$R_{DS(on)}$,TYP@VGS=4.5	38	mΩ
I_D	-9	A

Part ID	Package Type	Marking	Tape and reel infomation	100% UIS Tested
SM4805PRL	SOP8	4805	3000	100% Rg Tested

Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	25	±V
Continuous Drain Current A	T_A=25°C	I_D	-9.0	A
	T_A=70°C		-7.0	
Pulsed Drain Current B		I_{DM}	-14.4	
Avalanche Current G		I_{AR}	-2.9	
Repetitive avalanche energy L=0.1mH G		E_{AR}	-6.6	mJ
Power Dissipation A	T_A=25°C	P_D	2	W
	T_A=70°C		1.3	
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

Thermal Characteristics

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient A	t ≤ 10s	$R_{θJA}$	7	11	°C/W
Maximum Junction-to-Ambient A	Steady State		15	18	°C/W
Maximum Junction-to-Lead C	Steady State	$R_{θJL}$	4	7	°C/W

STATIC PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Units
BV$_{DSS}$	Drain-Source Breakdown Voltage	I$_D$ = -250uA, V$_{GS}$ = 0V	-30			V
I$_{DSS}$	Zero Gate Voltage Drain Current	VDS=-30V, VGS=0V			-1	uA
					-5	
I$_{GSS}$	Gate-Body leakage current	V$_{DS}$ = 0V, V$_{GS}$ = ±20V			±100	nA
V$_{GS(th)}$	Gate Threshold Voltage	V$_{DS}$ = V$_{GS}$ I$_D$ = 250μA	-1.4	-2.1	-2.8	V
R$_{DS(ON)}$	Static Drain-Source On-Resistance	VGS=-10V, ID=-9A		26	35	mΩ
		VGS=-4.5V, ID=-9A		38	54	
g$_{FS}$	Forward Transconductance	VDS=-5V, ID=-9A		99		S
V$_{SD}$	Diode Forward Voltage	IS=-1A,VGS=0V		-0.72	-1	V
I$_S$	Maximum Body-Diode Continuous Current				-9	A

DYNAMIC PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Units
C$_{iss}$	Input Capacitance	VGS=0V, VDS=-15V, f=1MHz		2060	2513	pF
C$_{oss}$	Output Capacitance			370	455	pF
C$_{rss}$	Reverse Transfer Capacitance			295	351	pF
R$_g$	Gate resistance	VGS=0V, VDS=0V, f=1MHz			5	Ω

SWITCHING PARAMETERS

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Q$_g$ (10V)	Total Gate Charge	VGS=-10V, VDS=-15V, ID=-9A		30		nC
Q$_g$ 4.5V)	Total Gate Charge			0		
Q$_{gs}$	Gate Source Charge			7		
Q$_{gd}$	Gate Drain Charge			10		
t$_{D(on)}$	Turn-On DelayTime	VGS=-10V, VDS=-15V,RL=0.75 Ω, RGEN=3Ω		15		ns
t$_r$	Turn-On Rise Time			12		
t$_{D(off)}$	Turn-Off DelayTime			42		
t$_f$	Turn-Off Fall Time			13.5		
t$_{rr}$	Body Diode Reverse Recovery Time	I$_F$=-8A, dI/dt=500A/μs		30		ns
Q$_{rr}$	Body Diode Reverse Recovery Charge	I$_F$=18A, dI/dt=500A/μs		22		nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS
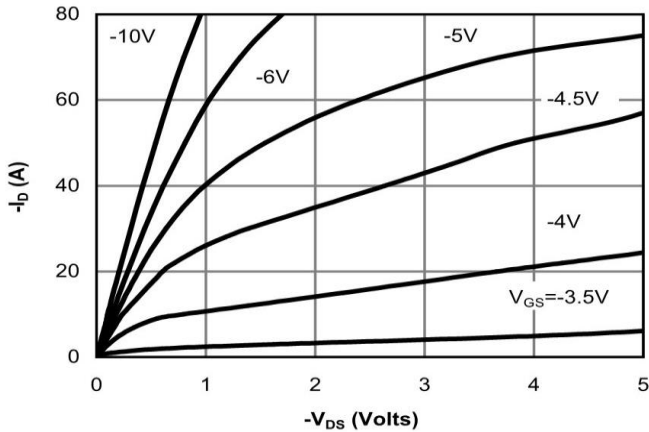

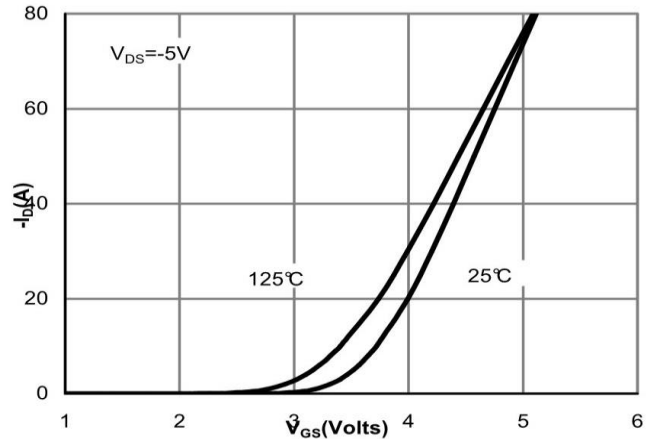Fig 1: On-Region Characteristics (Note E)

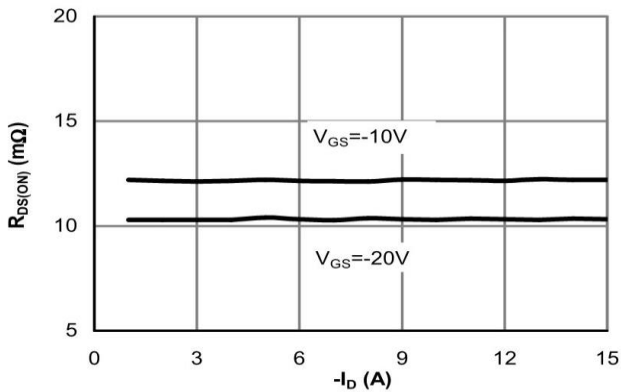Figure 2: Transfer Characteristics (Note E)

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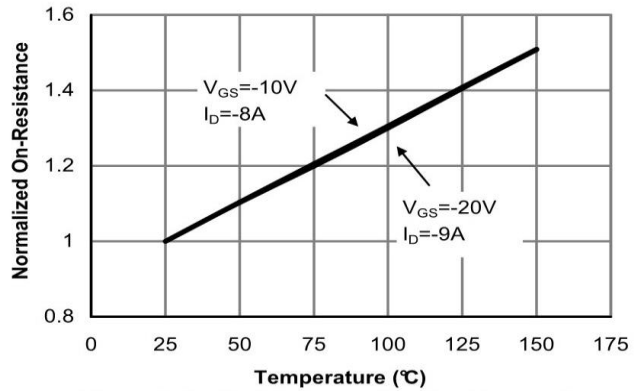

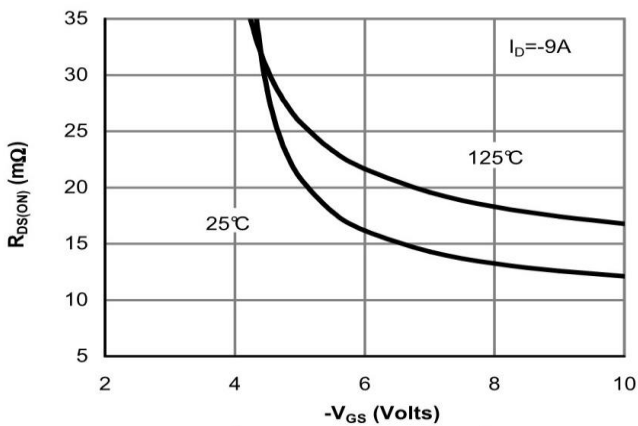Figure 4: On-Resistance vs. Junction Temperature (Note E)

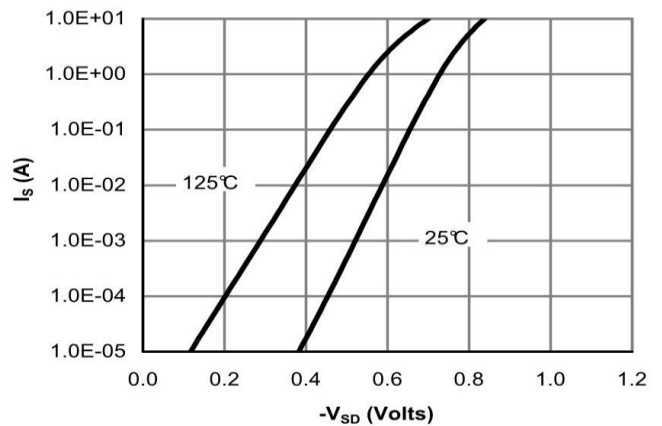Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

Figure 6: Body-Diode Characteristics (Note E)

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS
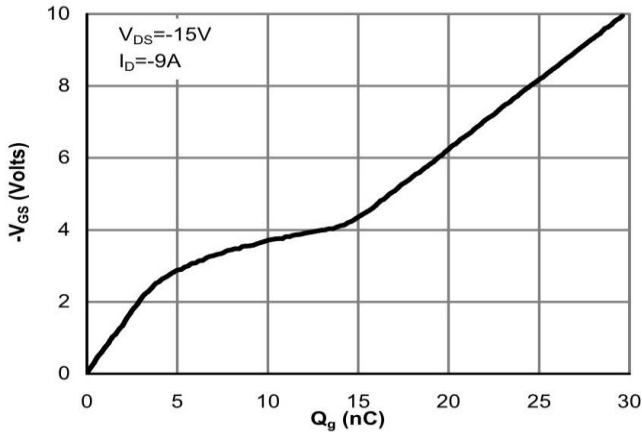

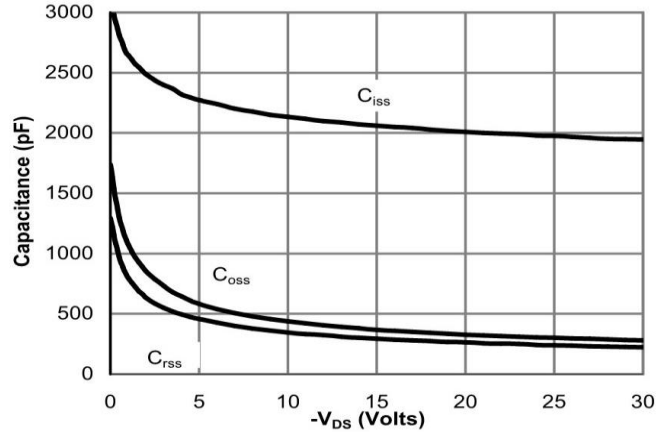Figure 7: Gate-Charge Characteristics

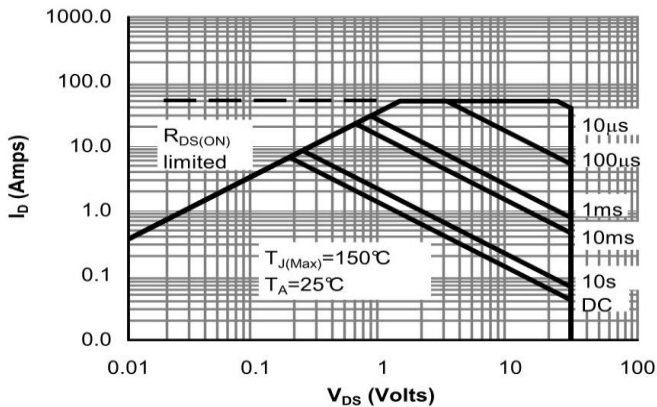Figure 8: Capacitance Characteristics

Figure 10: Maximum Forward Biased Safe Operating Area (Note F)

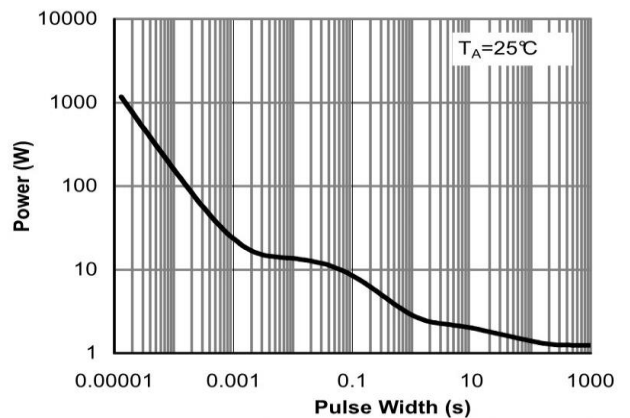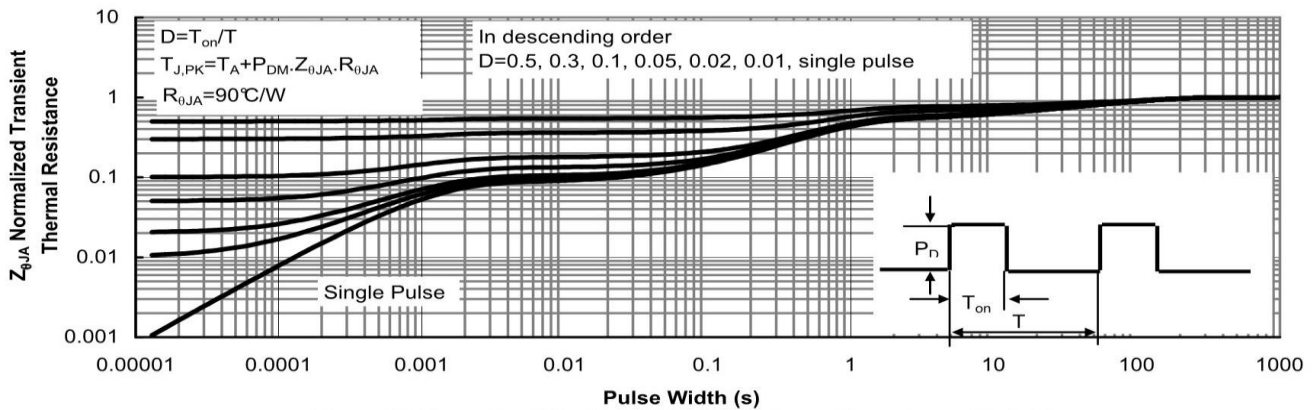Figure 11: Single Pulse Power Rating Junction-to-Ambient (Note F)

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

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET *category:*

Click to view products by SPS *manufacturer:*

Other Similar products are found below :

614233C 648584F NTNS3A92PZT5G IRFD120 IRFF430 JANTX2N5237 2N7000 2SK2464-TL-E FCA20N60_F109 FDZ595PZ AOD464 2SK2267(Q) 2SK2545(Q,T) 405094E 423220D MIC4420CM-TR VN1206L 614234A 715780A SSM6J414TU,LF(T 751625C IPP60R600P6XKSA1 RJK60S5DPK-M0#T0 PSMN4R2-30MLD TK31J60W5,S1VQ(O 2SK2614(TE16L1,Q) DMN1017UCP3-7 EFC2J004NUZTDG FCAB21350L1 P85W28HP2F-7071 DMN1053UCP4-7 NTE2384 NTE2969 NTE6400A DMN61D9UWQ-13 US6M2GTR DMN31D5UDJ-7 SSM6P54TU,LF DMP22D4UFO-7B IPS60R3K4CEAKMA1 DMN1006UCA6-7 DMN16M9UCA6-7 STF5N65M6 STU5N65M6 C3M0021120D DMN13M9UCA6-7 BSS340NWH6327XTSA1 MCM3400A-TP DMTH10H4M6SPS-13 IRF40SC240ARMA1