

RFM12N18/12N20 RFP12N18/12N20

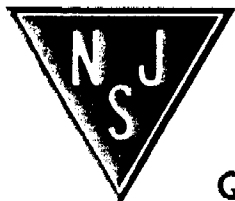
**N-Channel Enhancement Mode
 Power Field Effect Transistors**

Absolute Maximum Ratings (T _C = 25°C), Unless Otherwise Specified						
	RFM12N18	RFM12N20	RFP12N18	RFP12N20	UNITS	
Drain-Source Voltage	V _{DSS}	180	200	180	200	V
Drain-Gate Voltage (R _{GS} = 1mΩ)	V _{DGR}	180	200	180	200	V
Continuous Drain Current	I _D	12	12	12	12	A
RMS Continuous	I _{DM}	30	30	30	30	A
Pulsed Drain Current	V _{GS}	±20	±20	±20	±20	V
Gate-Source Voltage	P _D	100	100	75	75	W
Maximum Power Dissipation		0.8	0.8	0.8	0.8	W/°C
T _C = +25°C		-55 to +150	-55 to +150	-55 to +150	-55 to +150	°C
Above T _C = +25°C, Derate Linearly						
Operating and Storage Junction Temperature Range						

ELECTRICAL CHARACTERISTICS, At Case Temperature (T_c) = 25°C unless otherwise specified

CHARACTERISTIC	SYMBOL	TEST CONDITIONS	LIMITS				UNITS
			RFM12N18		RFM12N20		
			Min.	Max.	Min.	Max.	
Drain-Source Breakdown Voltage	V _{DSS}	I _D =1 mA V _{GS} =0	180	—	200	—	V
Gate-Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} I _D =1 mA	2	4	2	4	V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =145 V	—	1	—	—	μA
		V _{DS} =180 V	—	—	—	1	
		T _C =125°C V _{DS} =145 V V _{GS} =180 V	—	50	—	50	
Gate-Source Leakage Current	I _{DSS}	V _{GS} =±20 V V _{DS} =0	—	100	—	100	nA
Drain-Source On Voltage	V _{DS(on)} ^a	I _D =6 A V _{GS} =10 V	—	1.5	—	1.5	V
		I _D =12 A V _{GS} =10 V	—	3.6	—	3.6	
		I _D =6 A V _{GS} =10 V	—	0.25	—	0.25	
Static Drain-Source On Resistance	r _{DS(on)} ^a	I _D =6 A V _{GS} =10 V	—	0.25	—	0.25	Ω
Forward Transconductance	g _m ^a	V _{GS} =10 V I _D =6 A	4	—	4	—	mho
Input Capacitance	C _{iss}	V _{DS} =25 V	—	1700	—	1700	pF
Output Capacitance	C _{oss}	V _{GS} =0 V	—	600	—	600	
Reverse-Transfer Capacitance	C _{rss}	f=1 MHz	—	300	—	300	
Turn-On Delay Time	t _{d(on)}	V _{GS} =100 V	35(typ)	50	35(typ)	50	ns
Rise Time	t _r	I _D =6 A	120(typ)	200	130(typ)	200	
Turn-Off Delay Time	t _{d(off)}	R _{DS(on)} =R _{GS} =50 Ω	120(typ)	180	120(typ)	180	
Fall Time	t _f	V _{GS} =10 V	105(typ)	180	105(typ)	180	
Thermal Resistance Junction-to-Case	R _{θJC}	RFM12N18,	—	1.25	—	1.25	°C/W
		RFM12N20	—	1.25	—	1.25	
		RFP12N18,	—	1.67	—	1.67	
		RFP12N20	—	1.67	—	1.67	

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SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITIONS	LIMITS				UNITS
			RFM12N18 RFP12N18		RFM12N20 RFP12N20		
			MIN.	MAX.	MIN.	MAX.	
Diode Forward Voltage	V_{FD}^a	$I_{SD}=8\text{ A}$	—	1.4	—	1.4	V
Reverse Recovery Time	t_r	$I_F=4\text{ A}$ $dI_F/dt=100\text{ A}/\mu\text{s}$	325(typ)		325(typ)		ns

^aPulsed: Pulse duration=300 μs max., duty cycle=2%.

