

MAXIMUM RATINGS

Rating	Symbol	IRFF210	IRFF213	Unit
Drain-Source Voltage	V_{DS}	200	150	Vdc
Drain-Gate Voltage ($R_{GS} = 1.0 \text{ m}\Omega$)	V_{DGR}	200	150	Vdc
Gate-Source Voltage	V_{GS}	± 20		Vdc
Drain Current Continuous	I_D	2.2	1.8	Adc
Pulsed	I_{DM}	9.0	7.5	
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	15 0.12		Watts W/ $^\circ\text{C}$
Operating and Storage Temperature Range	T_J, T_{stg}	-55 to 150		$^\circ\text{C}$

THERMAL CHARACTERISTICS

Thermal Resistance Junction to Case	$R_{\theta JC}$	8.33	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	175	$^\circ\text{C/W}$
Maximum Lead Temperature 1.6 mm from Case for 10 s	T_L	300	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Drain-Source Breakdown Voltage ($V_{GS} = 0, I_D = 250 \mu\text{A}$)	IRFF210 IRFF213	$V_{(BR)DSS}$	200 150	—	Vdc
Zero Gate Voltage Drain Current ($V_{DS} = \text{Rated } V_{DSS}, V_{GS} = 0$)		I_{DSS}	—	250	μAdc
Gate-Body Leakage Current, Forward ($V_{GS} = 20 \text{ Vdc}, V_{DS} = 0$)		I_{GSSF}	—	100	nAdc
Gate-Body Leakage Current, Reverse ($V_{GS} = -20 \text{ Vdc}, V_{DS} = 0$)		I_{GSSR}	—	-100	nAdc

ON CHARACTERISTICS*

Gate Threshold Voltage ($V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$)		$V_{GS(th)}$	2.0	4.0	Vdc
Static Drain-Source On-Resistance ($V_{GS} = 10 \text{ Vdc}, I_D = 1.25 \text{ A}$)	IRFF210 IRFF213	$r_{DS(on)}$	—	1.5 2.4	Ohm
Forward Transconductance ($I_D = 1.25 \text{ A}, V_{DS} = 5.0 \text{ V}$)		g_{fs}	0.8	—	mhos

DYNAMIC CHARACTERISTICS

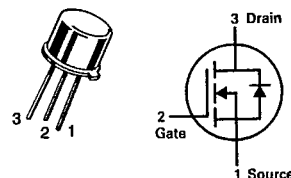
Input Capacitance	$(V_{DS} = 25 \text{ V}, V_{GS} = 0, f = 1.0 \text{ MHz})$	C_{iss}	—	200	pF
Output Capacitance		C_{oss}	—	80	
Reverse Transfer Capacitance		C_{rss}	—	25	

SWITCHING CHARACTERISTICS*

Turn-On Delay Time	$(V_{DD} = 0.5 \text{ Rated } V_{DSS}, I_D = 1.25 \text{ A}, R_{gen} = 50 \text{ ohms})$	$t_{d(on)}$	—	15	ns
Rise Time		t_r	—	25	
Turn-Off Delay Time		$t_{d(off)}$	—	15	
Fall Time		t_f	—	15	

SOURCE-DRAIN DIODE CHARACTERISTICS*

Forward On-Voltage	IRFF210 IRFF213	V_{SD}	—	2.0	Vdc
		V_{SD}	—	1.8	Vdc
Forward Turn-On Time	$(I_S = \text{Rated } I_{D(on)}, V_{GS} = 0)$	t_{on}	—	Negligible	ns
Reverse Recovery Time		t_{rr}	—	200 (Typ)	ns

*Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.IRFF210
IRFF213CASE 79-05, STYLE 6
TO-39 (TO-205AF)TMOS FET
TRANSISTORS

N-CHANNEL — ENHANCEMENT