

RFH35N08, RFH35N10

Power MOS Field-Effect Transistors

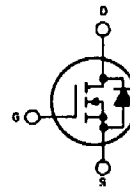
**N-Channel Enhancement-Mode
 Power Field-Effect Transistors**

35 A, 80 V - 100 V
 $r_{DS(on)} = 0.055 \Omega$

Features:

- SOA is power-dissipation limited
- Nanosecond switching speeds
- Linear transfer characteristics
- High input impedance
- Majority carrier device
- High-current, low-inductance package

TERMINAL DIAGRAM

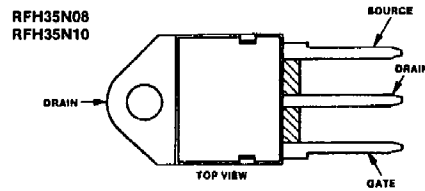


N-CHANNEL ENHANCEMENT MODE

The RFH35N08 and RFH35N10* are n-channel enhancement-mode silicon-gate power field-effect transistors designed for applications such as switching regulators, switching converters, motor drivers, relay drivers, and drivers for high-power bipolar switching transistors requiring high speed and low gate-drive power. These types can be operated directly from integrated circuits.

The RFH-types are supplied in the JEDEC TO-218AC plastic package.

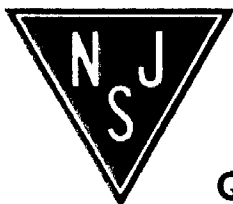
TERMINAL DESIGNATIONS



JEDEC TO-218AC

MAXIMUM RATINGS, Absolute-Maximum Values ($T_C = 25^\circ C$):

	RFH35N08	RFH35N10	
DRAIN-SOURCE VOLTAGE	80	100	V
DRAIN-GATE VOLTAGE, $R_{\theta Jc} = 1 M\Omega$	80	100	V
GATE-SOURCE VOLTAGE	± 20		V
DRAIN CURRENT, RMS Continuous	35		A
Pulsed	100		A
POWER DISSIPATION @ $T_C = 25^\circ C$	150		W
Derate above $T_C = 25^\circ C$	1.2		W/ $^\circ C$
OPERATING AND STORAGE TEMPERATURE	-55 to +150		$^\circ C$



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

RFH35N08, RFH35N10

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

CHARACTERISTIC	SYMBOL	TEST CONDITIONS	LIMITS				UNITS
			RFH35N08		RFH35N10		
			Min.	Max.	Min.	Max.	
Drain-Source Breakdown Voltage	BV _{DSS}	I _D = 1 mA V _{GS} = 0	80	—	100	—	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 _{oss}	V _{DS} = 65 V V _{GS} = 80 V	—	1	—	—	μA
		T _c = 125° C V _{DS} = 65 V V _{GS} = 80 V	—	50	—	—	
		V _{DS} = 80 V	—	—	—	50	
Gate-Source Leakage Current	I _{gss}	V _{GS} = ± 20 V V _{DS} = 0	—	100	—	100	nA
Drain-Source On Voltage	V _{DS(on)} [#]	I _D = 17.5 A V _{GS} = 10 V	—	0.983	—	0.983	V
		I _D = 35 A V _{GS} = 10 V	—	3.0	—	3.0	
Static Drain-Source On Resistance	r _{DS(on)} [#]	I _D = 17.5 A V _{GS} = 10 V	—	0.055	—	0.055	Ω
Forward Transconductance	g _{fs} [#]	V _{GS} = 10 V I _D = 17.5 A	10	—	10	—	mho
Input Capacitance	C _{iss}	V _{DS} = 25 V	—	3000	—	3000	pF
Output Capacitance	C _{oss}	V _{GS} = 0 V	—	1500	—	1500	
Reverse Transfer Capacitance	C _{rss}	f = 1 MHz	—	600	—	600	
Turn-On Delay Time	t _{d(on)}	V _{DD} = 50 V	45(typ)	100	45(typ)	100	ns
Rise Time	t _r	I _D = 17.5 A	225(typ)	450	225(typ)	450	
Turn-Off Delay Time	t _{d(off)}	R _{θJN} = R _{θJC} = 50Ω	240(typ)	450	240(typ)	450	
Fall Time	t _f	V _{GS} = 10 V	185(typ)	350	185(typ)	350	
Thermal Resistance Junction-to-Case	R _{θJC}	RFH35N08, RFH35N10 Series	—	0.83	—	0.83	°C/W

[#]Pulsed: Pulse duration = 300 μs max., duty cycle = 2%.

SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITIONS	LIMITS				UNITS
			RFH35N08		RFH35N10		
			Min.	Max.	Min.	Max.	
Diode Forward Voltage	V _{SD} [*]	I _{SD} = 17.5A	—	1.4	—	1.4	V
Reverse Recovery Time	t _{rr}	I _F = 4A, d _I /d _t = 100 A/μs	200 (typ.)		200 (typ.)		ns

^{*} Pulsed: Pulse duration = 300 μs max., duty cycle = 2%.