

Silicon N-MOSFET Transistor

IRF130

100V / 14A

DATASHEET

OEM – RCA

Source: RCA Databook MOSFET 1984

IRF130-133, IRF251-253, IRF420-423,
IRF510-513, IRF520-523, IRF530-533

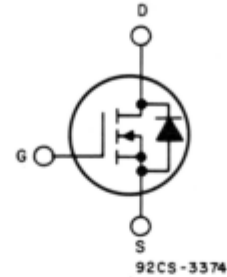
File Number **1469**

N-Channel Enhancement-Mode Silicon Gate Power Field-Effect Transistors

3.5-14 A, 60-500 V

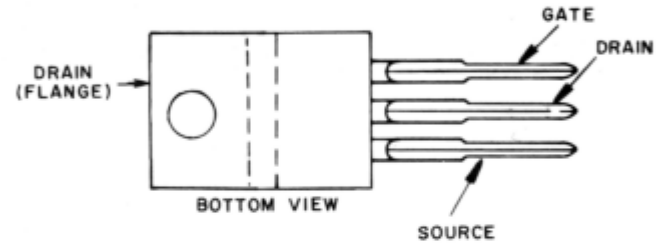
Features:

- Silicon gate for fast switching speeds - specified switching times at elevated temperatures
- Rugged - SOA is power-dissipation limited
- Low drive requirement, $V_{GS(th)} = 4 V$ (max.)



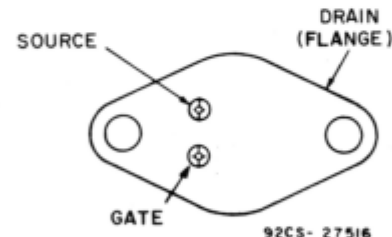
N-CHANNEL ENHANCEMENT MODE

TERMINAL DESIGNATIONS



JEDEC TO-220AB

The n-channel enhancement-mode silicon-gate power field-effect transistors are designed for high-voltage, high-speed power-switching applications, such as line-operated switching regulators, converters, solenoid and relay drivers.



JEDEC TO-204AE, AA

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

DRAIN-SOURCE VOLTAGE	V_{DSS}	See Table 2, TO-204AA, AE	V
		See Table 3, TO-220AB	V
GATE-SOURCE VOLTAGE	V_{GS}	± 20	V
DRAIN CURRENT	I_D	See Table 2, TO-204AA, AE	A
		See Table 3, TO-220AB	A
POWER DISSIPATION @ $T_c = 25^\circ C$	P_T	See Table 2, TO-204AA, AE	W
		See Table 3, TO-220AB	W
Derate above $T_c = 25^\circ C$		See Table 2, TO-204AA, AE	W/ $^\circ C$
		See Table 3, TO-220AB	W/ $^\circ C$
OPERATING AND STORAGE TEMPERATURE	T_j, T_{stg}	-55 to +150	$^\circ C$

THERMAL CHARACTERISTICS

THERMAL RESISTANCE (Junction-to-Case)	$R_{\theta JC}$	See Table 2, TO-204AA, AE	$^\circ C/W$
		See Table 3, TO-220AB	$^\circ C/W$
MAXIMUM LEAD TEMPERATURE FOR SOLDERING PURPOSES, 1/8 in. from case for 5 seconds	T_L	275	$^\circ C$

**IRF130-133, IRF251-253, IRF420-423,
IRF510-513, IRF520-523, IRF530-533**

Table 2 - TO-204AA, AE (Formerly TO-3)

Device	MAXIMUM RATINGS					ELECTRICAL CHARACTERISTICS						
	V _{DSS} (Volts)	I _D (Amp)	P _T (Watts)	Derating Factor W/°C	R _{θJC} °C/W	r _{DS(on)} (Ohm) @ Max.	I _D (Amp)	V _{GS(th)} (Volts) Min./Max.	g _{fs} (mho) Min.	t _{on} (ns) Typ.	t _{off} (ns) @ Typ.	I _D (Amp)
IRF130	100	14	75	0.6	1.67	0.18	8	2/4	4	115	130	8
IRF131	60											
IRF132	100	12	75	0.6	1.67	0.25	8	2/4	4	115	130	8
IRF133	60											
IRF251	150	30	150	1.2	0.833	.085	15	2/4	8	500	550	15
IRF253	150	25				.120						
IRF420	500	2.5	40	0.32	3.12	3.0	1.5	2/4	1	105	210	1.5
IRF421	450											
IRF422	500	2.0	40	0.32	3.12	3.0	1.5	2/4	1	105	210	1.5
IRF423	450											

* 60 mil leads

Table 3 - TO-220AB

Device	MAXIMUM RATINGS					ELECTRICAL CHARACTERISTICS						
	V _{DSS} (Volts)	I _D (Amp)	P _T (Watts)	Derating Factor W/°C	R _{θJC} °C/W	r _{DS(on)} (Ohm) @ Max.	I _D (Amp)	V _{GS(th)} (Volts) Min./Max.	g _{fs} (mho) Min.	t _{on} (ns) Typ.	t _{off} (ns) @ Typ.	I _D (Amp)
IRF510	100	4	20	0.16	6.25	0.6	2	2/4	1	75	155	2
IRF511	60											
IRF512	100	3.5	20	0.16	6.25	0.8	2	2/4	1	75	155	2
IRF513	60											
IRF520	100	8	40	0.32	3.12	0.3	4	2/4	1.5	90	145	4
IRF521	60											
IRF522	100	7	40	0.32	3.12	0.4	4	2/4	1.5	90	145	4
IRF523	60											
IRF530	100	14	75	0.6	1.67	0.18	8	2/4	4	115	130	8
IRF531	60											
IRF532	100	12	75	0.6	1.67	0.25	8	2/4	4	115	130	8
IRF533	60											