

Silicon N-MOSFET Transistor

TA9437B

400V / 10A

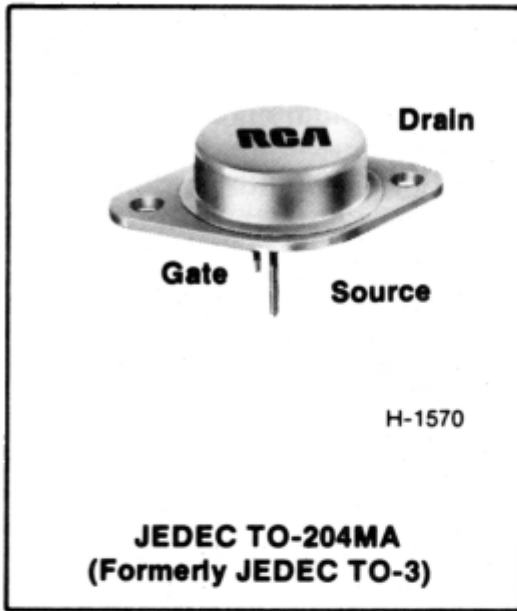
DATASHEET

OEM – RCA

Source: RCA Databook MOSFET 1984

**TA9437A
TA9437B**

Developmental Types



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

10A, 350V and 400V
 $V_{DS(on)}$: 2V

Features:

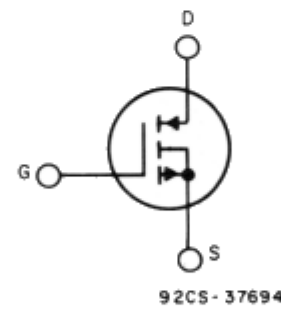
- Low on-state resistance
- Microsecond switching speeds
- High input impedance

Applications:

- Motor drives
- Power supplies
- Crowbar circuits
- Protective circuits

The TA9437A and TA9437B are n-channel enhancement-mode conductivity-modulated power field-effect transistors designed for applications such as switching regulators, switching converters and motor drivers.

TERMINAL DIAGRAM



N-CHANNEL ENHANCEMENT MODE

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

	TA9437A	TA9437B	
Drain-Source Voltage	350	400	V
Gate-Source Voltage	± 20		V
Drain Current	10		A
Gate Threshold Voltage	2-4		V
Drain Current (80% of Rated V_{DS})	10		μA
Gate-Source Leakage Current	100		nA
Drain-Source ON Voltage (At Rated I_D , $V_{GS} = 10 V$)	2		V
Thermal Resistance (J-C)	1.67		$^\circ C/W$
$T_{stg}, T_J(max)$	-55 to +150		$^\circ C$

File No. 1533

TA9437A
TA9437B**ELECTRICAL CHARACTERISTICS, at Case Temperature (Tc) = 25° C unless otherwise specified.**

CHARACTERISTIC	SYMBOL	TEST CONDITIONS	LIMITS				UNITS
			TA9437A		TA9437B		
			Min.	Max.	Min.	Max.	
Drain-Source Breakdown Voltage	BV _{DSS}	I _D = 1 mA V _{GS} = 0	350	—	400	—	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} = 280 V	—	10	—	—	μ A
		V _{DS} = 320 V	—	—	—	10	
		T _C = 125° C V _{DS} = 280 V	—	500	—	—	
		V _{DS} = 300 V	—	—	—	500	
Gate-Source Leakage Current	I _{GSS}	V _{GS} = \pm 20 V V _{DS} = 0	—	100	—	100	nA
On-State Gate Voltage	V _{GS(on)} ^a	V _{DS} = 2 V I _D = 10 A	—	10	—	10	V
		V _{DS} = 1.5 V I _D = 5 A	—	10	—	10	
Drain-Source On Voltage	V _{DS(on)} ^a	I _D = 10 A V _{GS} = 10 V	—	2	—	2	V
		I _D = 5 A V _{GS} = 10 V	—	1.5	—	1.5	
Input Capacitance	C _{iss}	V _{DS} = 25 V	—	650	—	650	pF
Output Capacitance	C _{oss}	V _{GS} = 0 V	—	230	—	230	
Reverse Transfer Capacitance	C _{rss}	f = 1 MHz	—	60	—	60	
Turn-On Delay Time	t _{d(on)}	V _{DS} = 30	—	0.5	—	0.5	μ s
Rise Time	t _r	I _D = 10 A	—	0.5	—	0.5	
Turn-Off Delay Time	t _{d(off)}	R _{gen} = R _{gs} = 50 Ω	—	0.5	—	0.5	
Fall Time	t _f	V _{GS} = 10 V	—	2.5	—	2.5	
Thermal Resistance Junction-to-Case	R θ _{JC}	TA9437A, TA9437B	—	1.67	—	1.67	°C/W

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