



Series 2N6674, 2N6675

High Voltage NPN Transistors

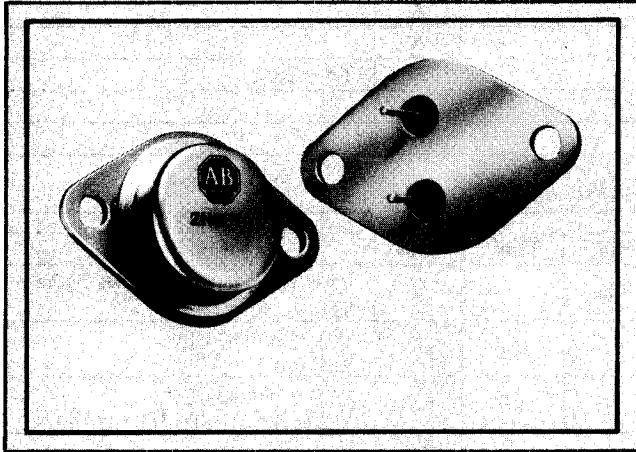
10 Amperes • 400 Volts

FEATURES

- High Voltage Rating—400 Volts
- Industrial and Military Applications
- Superior Resistance to Thermal Fatigue

APPLICATIONS

- Switching Regulators
- PWM Inverters
- Deflection Circuits
- Motor Controls
- Solenoid Drivers



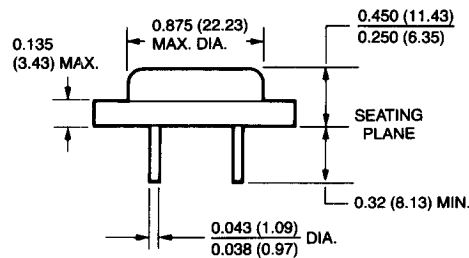
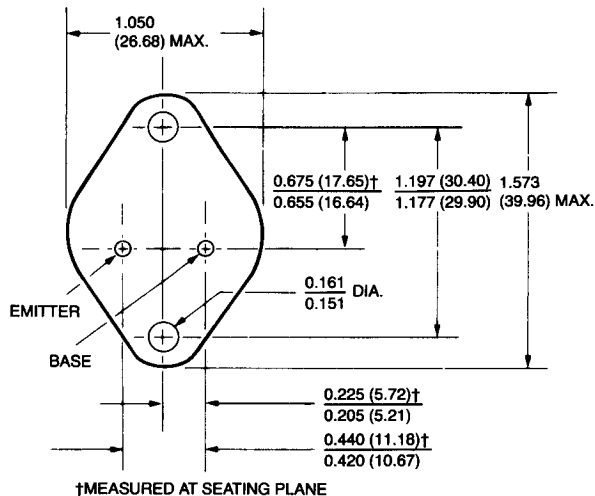
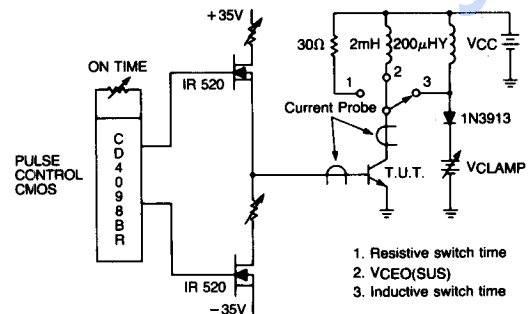
SPECIFICATIONS

General

The 2N6674 and 2N6675 series transistors are high-voltage, high-gain, NPN, 10 ampere switching transistors for Industrial and Military Service.

The series is particularly well suited to off-line (transformerless) switching power supplies operating as high as 40 KHz. Other applications include PWM Inverters, Motor Controls, Relay and Solenoid Drivers, Deflection Circuits and Pulse Modulators.

Switch time and sustaining test circuit



Basic dimensions in inches.

Dimensions shown in
PARENTHESES are in
millimeters.

Package outline JEDEC TO-204MA
(Formerly JEDEC TO-3)

AVAILABLE IN STANDARD VALUES FROM STOCK AT ELECTRONIC DISTRIBUTORS.

SERIES 2N6674/2N6675

High Voltage Fast Switching NPN Transistors

Absolute maximum ratings

Description	2N6674	2N6675	Unit	Conditions
V _{CBO} Collector-Base Voltage	450	650	Volts	
V _{CEO} Collector-Emitter Voltage	300	400	Volts	
V _{CEX} Collector-Emitter Voltage	350	450	Volts	
I _C Collector Current Continuous	15		A	
I _C Collector Current Peak	20		A	
I _B Base Current Continuous	5		A	
I _B Base Current Peak	10		A	
P _D Maximum Power Dissipation	175		W	T _C = 25°C
I _E Emitter Current Continuous	15		A	
I _E Emitter Current Peak	20		A	

Electrical characteristics at 25°C (unless otherwise specified)

Description	2N6674		2N6675		Unit	Conditions
	Min.	Max.	Min.	Max.		
V _{CEO(sus)} Collector-Emitter Sustaining Voltage 1	300		400		V	I _C = .2A, L = 2mH I _B = 0
V _{CEX(sus)} Collector-Emitter Sustaining Voltage 1	350		450		V	I _C = 10A, I _{B1} = 2A V _{BE(off)} = -6V
I _{CEV} Collector Cutoff Current 1		0.1		0.1	mA	V _{CE} = Rated V _{CBO} V _{BE(off)} = -1.5V
		1.0		1.0	mA	V _{CE} = Rated V _{CBO} V _{BE(off)} = -1.5V, T _C = +100°C
I _{EBO} Emitter Cutoff Current 1		2		2	mA	V _{EB} = 8V
V _{CE(sat)} Collector-Emitter Saturation Voltage 1 2		1		1	V	I _C = 10A, I _B = 2A
		2		2	V	I _C = 10A, I _B = 2A, T _C = +100°C
		5		5	V	I _C = 15A, I _B = 5A
V _{BE(sat)} Base-Emitter Saturation Voltage 1 2		1.5		1.5	V	I _C = 10A, I _B = 2A
h _{FE} DC Current Gain 1 2	8	20	8	20		I _C = 10A, V _{CE} = 5V
f _T Gain-Bandwidth Product 1	15	50	15	50	MHz	I _C = 1A, V _{CE} = 10V f _{test} = 5MHz
C _{OB} Output Capacitance	150	500	150	500	pF	V _{CE} = 10V, f _{test} = .1MHz
I _{s/b} Second Breakdown Collector Current	5.9		5.9		A	V _{CE} = 30V Non Rep. tp = 1s

Switching characteristics

Description — Resistive Load	Min.	Max.	Min.	Max.	Unit	Conditions
t _d Delay Time 1		0.1		0.1	μs	V _{CC} = 135V, I _C = 10A I _{B1} = 2A, I _{B2} = 2A, t _p = 20μs V _{BE(off)} = -6V
t _r Rise Time 1		0.6		0.6	μs	
t _s Storage Time 1		2.5		2.5	μs	
t _f Fall Time 1		0.5		0.5	μs	
Description — Inductive Load, Clamped	Min.	Max.	Min.	Max.	Unit	Conditions
t _c Commutation Time		0.5		0.5	μs	V _{clamp} = V _{CEX} , I _C = 10A I _{B1} = 2A, I _{B2} = -2A V _{BE(off)} = -6V, L = 50μH
t _c Commutation Time		0.8		0.8	μs	V _{clamp} = V _{CEX} , T _C = +100°C I _{B1} = 2A, I _{B2} = 2A, I _C = 10A V _{BE(off)} = -6V, L = 50μH

Thermal and mechanical characteristics

Description	Type	Min.	Typ.	Max.	Unit	Conditions
R _{θJC} Thermal Resistance Junction to Case	All		1.0		°C/W	
Maximum Lead Temperature for Soldering Purposes: 1/8" from Case for 5 Seconds				275	°C	
t _J , t _{STG} Operating and Storage Junction Temperature Range		-65		200	°C	

1 IN ACCORDANCE WITH JEDEC REGISTRATION DATA.

2 PULSE TEST: PW = 300 μs, DUTY CYCLE ≤ 2%