

"BIG IDEAS IN
BIG POWER"
PowerTech
400 AMPERES
PT-9503

SILICON NPN TRANSISTOR

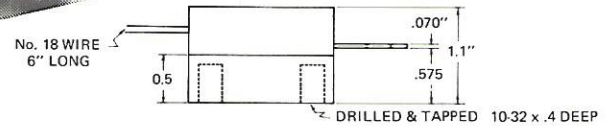
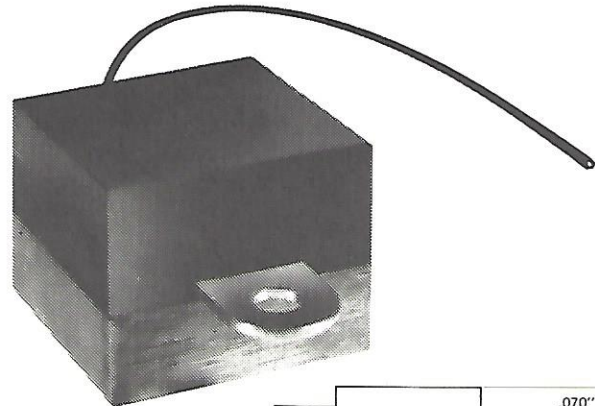
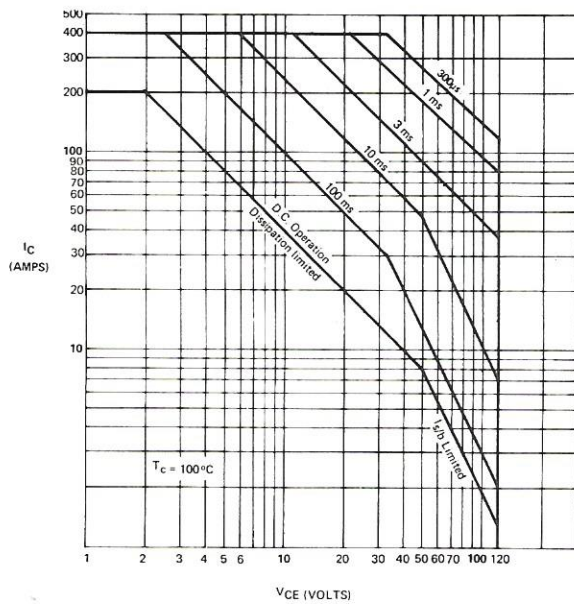
FEATURES:

$V_{CE(sat)}$ V @ 200 A
 V_{BE} 1.5 V @ 200 A

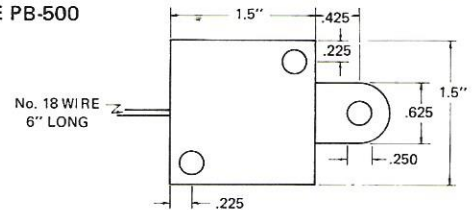
h_{FE} 5 min @ 400A
 t_f 3 μ sec

P_D 625 Watts
 E_S/b 6 Joules

SAFE OPERATING AREA



PACKAGE PB-500



PowerTech's transistors offer high current capability, high breakdown voltage and the lowest available saturation voltage. They have exceptional resistance to both forward and reverse second breakdown. This unique combination of device characteristics makes them particularly suited for a wide variety of high current applications, which include series and switching regulators, motor controls, servoamplifiers and power control circuits. The transistors will provide outstanding performance when used as replacements for paralleled lower current devices, resulting in considerable reductions in weight, space and circuit complexity. Their reliability is assured through 100% power testing at 40V, 10A @ 100°C case temperature.

MAXIMUM RATINGS

Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Peak Collector Current
D.C. Collector Current
Power Dissipation @ 25°C
Power Dissipation @ 100°C
Thermal Resistance
Operating Temperature Range
Storage Temperature Range

SYMBOL

V_{CBO}
 V_{CEO} (sus)
 V_{EBO}
 I_C
 I_C
 P_D
 P_D
 θ_{J-C}
 T_J
 T_A

PT-9503

120V
120V
10V
400A
200A
625W
400W
0.25° C/W
-65 to 200°C
-65 to 150°C

ELECTICAL CHARACTERISTICS 25°C

TEST	SYMBOL	LIMITS		UNITS	TEST CONDITIONS
		PT-9503			
		MIN.	MAX.		
D.C. Current Gain*	h_{FE}	10	40		$I_C = 200A, V_{CE} = 4V$
D.C. Current Gain*	h_{FE}	5	—	—	$I_C = 400A, V_{CE} = 4V$
Collector Saturation Voltg.*	$V_{CE} (sat)$	—	0.5	V	$I_C = 200A, I_B = 20A$
Collector Saturation Voltg.*	$V_{CE} (sat)$	—	1.0	V	$I_C = 400A, I_B = 80A$
Base Emitter Voltage*	V_{BE}	—	1.5	V	$I_C = 200A, V_{CE} = 2V$
Base Emitter Voltage*	V_{BE}	—	2.5	V	$I_C = 400A, V_{CE} = 4V$
Collector-Emitter Voltage*	$V_{CEO} (sus)$	120	—	V	$I_C = 200mA, I_B = 0$
Collector Cutoff Current	I_{CBO}	—	5	mA	$V_{CB} = 120V, I_{EB} = 0$
Collector Cutoff Current @ 150° C	I_{CBO}	—	10	mA	$V_{CB} = 100V, I_{EB} = 0$
Emitter Cutoff Current	I_{EBO}	—	5	mA	$V_{EB} = 10V, I_{CB} = 0$
Gain Bandwidth Product (Typ.)	f_t	1	—	MHz	$I_C = 5A, V_{CE} = 10V, f = 100KHz$
Collector Capacitance	C_{obo}	—	5000	pf.	$V_{CB} = 10V, f = 100KHz$
Switching Speed (Typ.) (Power Tech Test Circuit)	t_r	—	3	μ sec	$I_C = 75A$
	t_s	—	3	μ sec	
	t_f	—	3	μ sec	$I_B = 15A, - I_{B2} = 7.5A$

* $\leq 300 \mu$ sec Pulse 2% Duty Cycle

