

POWERTECH INC

BIG POWER™

PowerTech**70 AMPERES****PT-7509****SILICON NPN TRANSISTOR****MAXIMUM RATINGS****SYMBOL****PT-7509**

Collector-Base Voltage

 V_{CBO}

200V

Collector-Emitter Voltage

 V_{CEO}

200V

Emitter-Base Voltage

 V_{EBO}

10V

Peak Collector Current

 I_{CM}^*

70A

D.C. Collector Current

 I_C

30A

Power Dissipation at 25°C Case Temperature

 P_D

350W

Power Dissipation at 100°C Case Temperature

 P_D

200W

Operating Junction Temperature Range

 T_J

-65 to 200°C

Storage Temperature Range

 T_A

-65 to 200°C

Thermal Resistance

 θ_{JC}

0.5° C/W

Package

TO-63

ELECTRICAL CHARACTERISTICS (at 25°C unless noted)

TEST	SYMBOL	LIMITS		UNIT	TEST CONDITIONS
		PT-7509			
		MIN.	MAX.		
D.C. Current Gain*	h_{FE}	10	40		$I_C=30A, V_{CE}=2V$
D.C. Current Gain*	h_{FE}	5	—		$I_C=70A, V_{CE}=4V$
Collector Saturation Voltage*	$V_{CE(sat)}$	—	0.6	V	$I_C=30A, I_B=3A$
Collector Saturation Voltage*	$V_{CE(sat)}$	—	1.5	V	$I_C=70A, I_B=14A$
Base Emitter Voltage*	V_{BE}	—	1.5	V	$I_C=30A, V_{CE}=2V$
Base Emitter Voltage*	V_{BE}	—	2.5	V	$I_C=70A, V_{CE}=4V$
Collector-Emitter Breakdown Voltage*	$V_{CEO(sus)}$	200	—	V	$I_C=200mA, I_B=0$
Collector Cut-off Current	I_{CBO}	—	2.0	mA	$V_{CB}=200V, I_{EB}=0$
Collector Cut-off Current @ 150°C	I_{CBO}	—	10	mA	$V_{CB}=100V, I_{EB}=0$
Emitter Cut-off Current	I_{EBO}	—	1.0	mA	$V_{EB}=10V, I_{CB}=0$
Gain Bandwith Product Typ.	f_t	1.0	—	MHz	$I_C=5A, V_{CE}=10V,$ $f=100KHz$
Collector Capacitance	C_{obo}	—	1800	pf	$V_{CB}=10V$
Switching Speed Typ.	t_r	—	2	μs.	
(PowerTech Test Circuit)	t_s	—	3	μs.	$I_C=30A$
	t_f	—	2	μs.	$I_{B1}=6A, -I_{B2}=3A$

*PW ≤ 300μs., D.C. ≤ 2%

PT-7509

T-33-15

SAFE OPERATING AREA