

"BIG IDEAS IN
BIG POWER"

PowerTech

100 AMPERES

PT-5501
PT-5502

SILICON NPN TRANSISTORS

MAXIMUM RATINGS	SYMBOL	PT-5501	PT-5502
Collector-Base Voltage	V_{CBO}	80V	100V
Collector-Emitter Voltage	V_{CEO}	60V	80V
Emitter-Base Voltage	V_{EBO}	10V	10V
Peak Collector Current	I_{CM}^*	100A	100A
D.C. Collector Current	I_C	50A	50A
Power Dissipation at 25°C Case Temp.	P_D	350W	350W
Power Dissipation at 100°C Case Temp.	P_D	200W	200W
Operating Junction Temperature Range	T_J	-65 to 200°C	-65 to 200°C
Storage Temperature Range	T_A	-65 to 200°C	-65 to 200°C
Package:		TO-63	TO-63
Thermal Resistance	θ_{JC}	0.5° C/W	0.5° C/W

ELECTRICAL CHARACTERISTICS (at 25°C unless noted)

TEST	SYMBOL	LIMITS				UNIT	TEST CONDITIONS
		PT-5501		PT-5502			
		MIN.	MAX.	MIN.	MAX.		
D.C. Current Gain*	h_{FE}	20	80	20	80		$I_C=50A, V_{CE}=2V$
D.C. Current Gain*	h_{FE}	10	—	10	—	—	$I_C=100A, V_{CE}=4V$
Collector Saturation Voltage*	$V_{CE(sat)}$	—	0.5	—	0.5	V	$I_C=50A, I_B=5A$
Collector Saturation Voltage*	$V_{CE(sat)}$	—	1.0	—	1.0	V	$I_C=100A, I_B=10A$
Base Emitter Voltage*	V_{BE}	—	1.2	—	1.2	V	$I_C=50A, V_{CE}=2V$
Base Emitter Voltage*	V_{BE}	—	2.0	—	2.0	V	$I_C=100A, V_{CE}=4V$
Col-Em. Breakdown Voltage*	$V_{CEO(sus)}$	60	—	80	—	V	$I_C=200mA, I_B=0$
Collector Cutoff Current	I_{CBO}	—	2.0	—	—	mA	$V_{CB}=80V, I_{EB}=0$
Collector Cutoff Current	I_{CBO}	—	—	—	2.0	mA	$V_{CB}=100V, I_{EB}=0$
Col. Cutoff Current @ 150°C	I_{CBO}	—	10	—	—	mA	$V_{CB}=60V, I_{EB}=0$
Col. Cutoff Current @ 150°C	I_{CBO}	—	—	—	10	mA	$V_{CB}=80V, I_{EB}=0$
Emitter Cutoff Current	I_{EBO}	—	1.0	—	1.0	mA	$V_{EB}=10V, I_{CB}=0$
Gain Bandwith Product Typ.	f_t	1.0	—	1.0	—	MHz	$I_C=5A, V_{CE}=10V$
Switching Speed Typ.	t_r	—	2.0	—	2.0	μs.	$I_C=50A$
(PowerTech Test Circuit)	t_s	—	3.0	—	3.0	μs.	$I_{B1}=10A, I_{B2}=5A$
	t_f	—	0.7	—	0.7	μs.	

* $\leq 300\mu\text{sec. DC} \leq 2\%$