

"BIG IDEAS IN  
BIG POWER"  
**PowerTech**

**200 AMPERES**

PT-6501  
PT-6502

**SILICON NPN TRANSISTORS**

MAXIMUM RATINGS	SYMBOL	PT-6501	PT-6502
Collector-Base Voltage	$V_{CBO}$	80V	100V
Collector-Emitter Voltage	$V_{CEO}$	60V	80V
Emitter-Base Voltage	$V_{EBO}$	10V	10V
Peak Collector Current	$I_{CM}^*$	200A	200A
D.C. Collector Current	$I_C$	100A	100A
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-114	TO-114
Thermal Resistance	$\theta_{JC}$	0.5° C/W	0.5° C/W

ELECTRICAL CHARACTERISTICS (at 25°C unless noted)

TEST	SYMBOL	LIMITS				UNIT	TEST CONDITIONS
		PT-6501		PT-6502			
		MIN.	MAX.	MIN.	MAX.		
D.C. Current Gain*	$h_{FE}$	15	60	15	60		$I_C=100A, V_{CE}=2V$
D.C. Current Gain*	$h_{FE}$	5	—	5	—	—	$I_C=200A, V_{CE}=4V$
Collector Saturation Voltage*	$V_{CE(sat)}$	—	0.75	—	0.75	V	$I_C=100A, I_B=10A$
Collector Saturation Voltage*	$V_{CE(sat)}$	—	2.0	—	2.0	V	$I_C=200A, I_B=40A$
Base Emitter Voltage*	$V_{BE}$	—	1.5	—	1.5	V	$I_C=100A, V_{CE}=2V$
Base Emitter Voltage*	$V_{BE}$	—	3.0	—	3.0	V	$I_C=200A, V_{CE}=4V$
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.	

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

### SAFE OPERATING AREA

