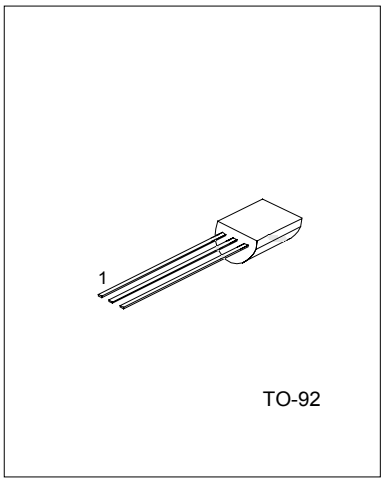
UTC PN2907A PNP EPITAXIAL PLANAR TRANSISTOR

PNP General Purpose Amplifier

FEATURES
This device is designed for use as a general purpose amplifier and switch requiring collector currents to 500 mA.



TO-92

1:EMITTER 2:BASE 3:COLLECTOR

MAXIMUM RATINGS* (Ta=25°C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNITS
Collector-Emitter Voltage	V_{CEO}	60	V
Collector-Base Voltage	V_{CBO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current-Continuous	I_C	800	mA
Operating and Storage Junction Temperature Range	Tj, Tstg	-55 to +150	°C

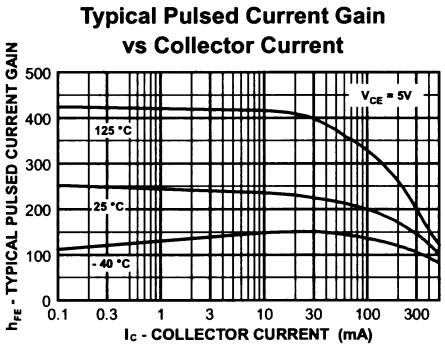
Note: These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

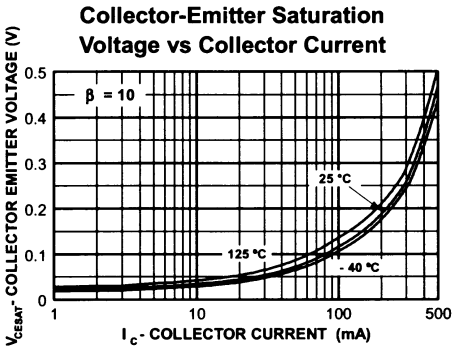
ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage*	$V_{(BR)CEO}$	I_C=10mA,I_B=0	60		V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA,I_E=0	60		V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA ,I_C=0	5.0		V
Base Cutoff Current	I_B	V_{CB}=30V,V_{EB}=0.5V		50	nA
Collector Cutoff Current	I_{CEX}	V_{CE}=30V,V_{BE}=0.5V		50	nA
Collector Cutoff Current	I_{CBO}	V_{CB}=50V,I_E=0		0.02	μA
		V_{CB}=50V,I_E=0,T_A=150°C		20	μA
ON CHARACTERISTICS					
DC Current Gain	hFE	Ic=0.1mA, V_{CE}=10V	75		
		Ic=1.0 mA,V_{CE}=10V	100		
		Ic=10 mA,V_{CE}=10V	100		
		Ic=150 mA,V_{CE}=10V	100	300	

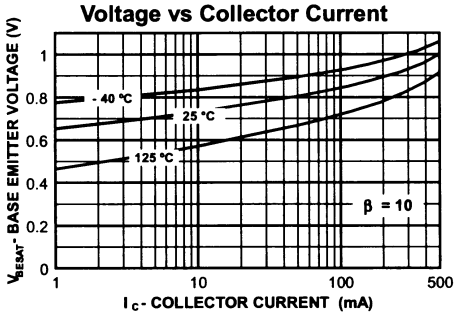
		Ic=500 mA,V_{CE}=10V	50		
Collector-Emitter Saturation Voltage*	VCE(sat)	Ic=150 mA,I_B=15mA Ic=500 mA, I_B=50mA		0.4 1.6	V V
Base-Emitter Saturation Voltage	VBE(sat)	Ic=150 mA,I_B=15mA* Ic=500 mA, I_B=50mA		1.3 2.6	V V
SMALL SIGNAL CHARACRERISTICS					
Current Gain-Bandwidth Product	fT	I_C=50Ma.V_{CE}=20V, F=100MHz	200		MHz
Output Capacitance	Cobo	V_{CB}=10V,IE=0, f=100kHz		8.0	pF
Input Capacitance	Cibo	V_{EB}=2.0V,I_C=0, f=100kHz		30	pF
SWITCHING CHARACRERISTICS					
Turn-on Time	ton	V_{CC}=30V,I_C=150mA I_{B1}=15mA			
Delay Time	td				
Rise Time	tr				
Turn-off Time	toff	V_{CC}=6.0V,I_C=150mA I_{B1}=I_{B2}=15mA			
Storage Time	ts				
Fall Time	tf				
Thermal CHARACTERISTICS					
Total Device Dissipation Derate above 25°C	P_D			625 5.0	mW mW/°C
Thermal resistance, junction to Case	$R_{\theta JC}$			83.3	°C/W
Thermal resistance, junction to Ambient	$R_{\theta JA}$			200	°C/W

*Pulse Test::Pulse Width £ 300ms,Duty Cycle £ 2.0%

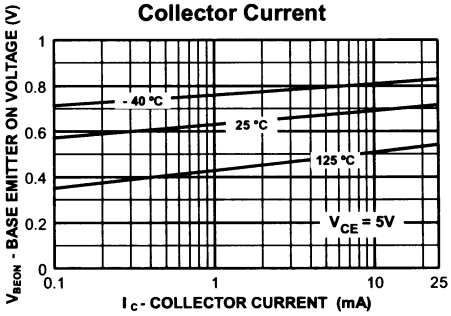




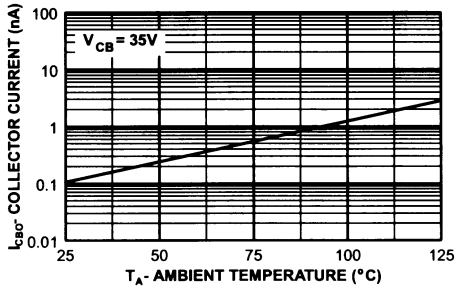
Base-Emitter Saturation Voltage vs Collector Current



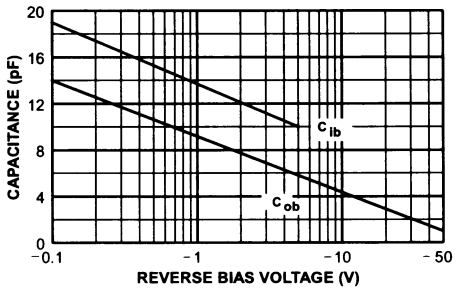
Base Emitter ON Voltage vs Collector Current



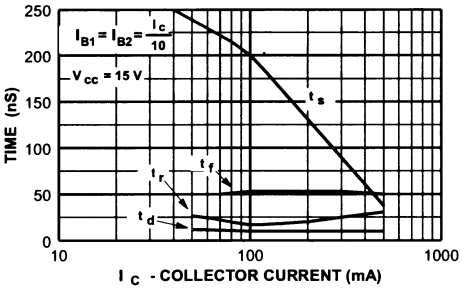
Collector-Cutoff Current vs. Ambient Temperature



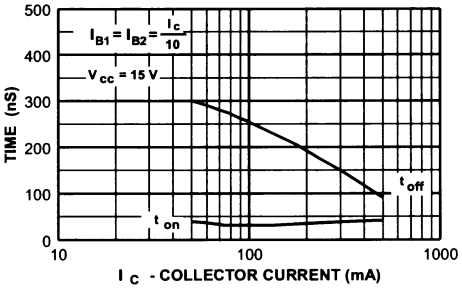
Input and Output Capacitance vs Reverse Bias Voltage



Switching Times vs Collector Current



Turn On and Turn Off Times vs Collector Current



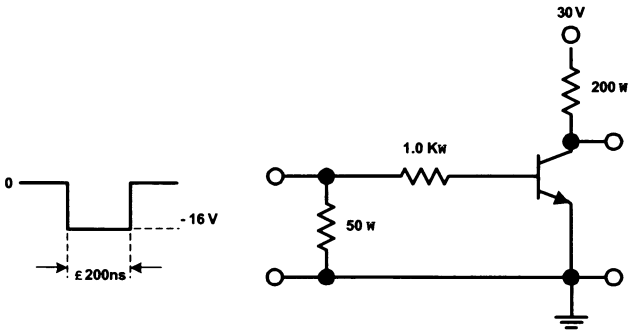


FIGURE 1: Saturated Turn-On Switching Time Test Circuit