



FUKUCOM COMPANY LTD.

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,
KWUN TONG, KOWLOON, HONG KONG.

TEL: 852-2790 0314 FAX: 852-2790 0206

FJP13007 NPN Silicon Transistor

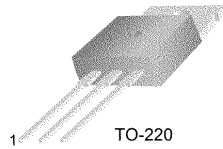


FJP13007

NPN Silicon Transistor

High Voltage Switch Mode Application

- High Speed Switching
- Suitable for Electronic Ballast and Switching Regulator



TO-220
1.Base 2.Collector 3.Emitter

Absolute Maximum Ratings T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	700	V
V _{CEO}	Collector-Emitter Voltage	400	V
V _{EBO}	Emitter-Base Voltage	9	V
I _C	Collector Current (DC)	8	A
I _{CP}	Collector Current (Pulse)	16	A
I _B	Base Current	4	A
P _C	Collector Dissipation (T _a = 25°C)	80	W
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature	-65 ~ 150	°C



FUKUCOM COMPANY LTD.

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,
KWUN TONG, KOWLOON, HONG KONG.

TEL: 852-2790 0314 FAX: 852-2790 0206

FJP13007 NPN Silicon Transistor

Electrical Characteristics T_C = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max	Units
BV _{CEO}	Collector-Emitter Breakdown Voltage	I _C = 10mA, I _B = 0	400			V
I _{EBO}	Emitter Cut-off Current	V _{EB} = 9V, I _C = 0			1	mA
h _{FE1}	DC Current Gain *	V _{CE} = 5V, I _C = 2A	8		60	
h _{FE2}		V _{CE} = 5V, I _C = 5A	5		30	
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 2A, I _B = 0.4A			1	V
		I _C = 5A, I _B = 1A			2	V
		I _C = 8A, I _B = 2A			3	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 2A, I _B = 0.4A			1.2	V
		I _C = 5A, I _B = 1A			1.6	V
f _T	Current Gain Bandwidth Product	V _{CE} = 10V, I _C = 0.5A	4			MHz
C _{ob}	Output Capacitance	V _{CB} = 10V, f = 0.1MHz		110		pF
t _{ON}	Turn On Time	V _{CC} = 125V, I _C = 5A I _{B1} = -I _{B2} = 1A R _L = 50Ω			1.6	μs
t _{STG}	Storage Time				3.0	μs
t _F	Fall Time				0.7	μs

* Pulse Test: PW ≤ 300μs, Duty Cycle ≤ 2%

h_{FE} Classification

Classification	H1	H2
h _{FE1}	15 ~ 28	26 ~ 39



FUKUCOM COMPANY LTD.

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,
KWUN TONG, KOWLOON, HONG KONG.

TEL: 852-2790 0314 FAX: 852-2790 0206

FJP13007 NPN Silicon Transistor

Typical Performance Characteristics

Figure 1. DC Current Gain

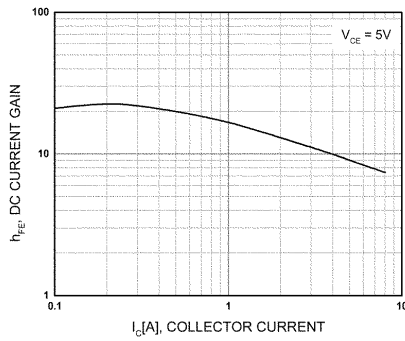


Figure 2. Saturation Voltage

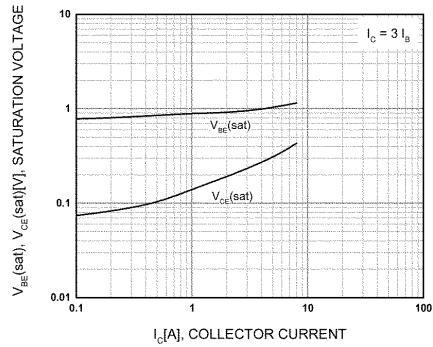


Figure 3. Collector Output Capacitance

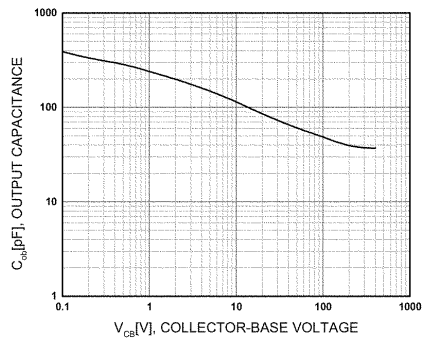


Figure 4. Turn On Time

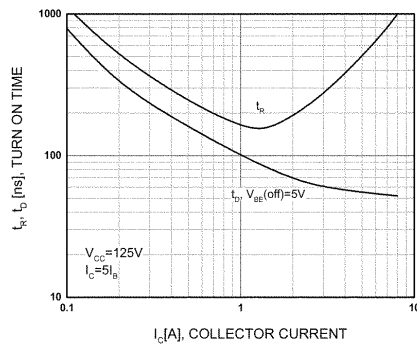


Figure 5. Turn Off Time

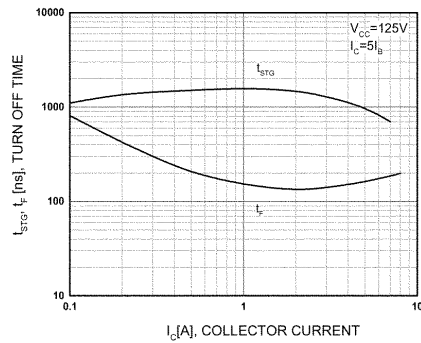
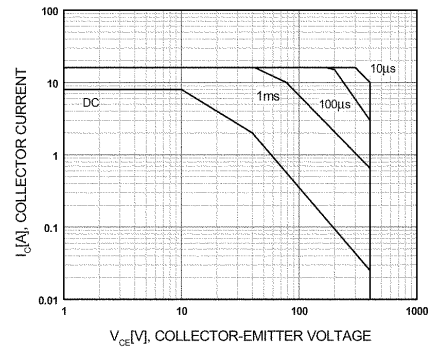


Figure 6. Forward Biased Safe Operating Area





FUKUCOM COMPANY LTD.

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,
KWUN TONG, KOWLOON, HONG KONG.

TEL: 852-2790 0314 FAX: 852-2790 0206

Typical Performance Characteristics (Continued)

Figure 7. Reverse Biased Safe Operating Area

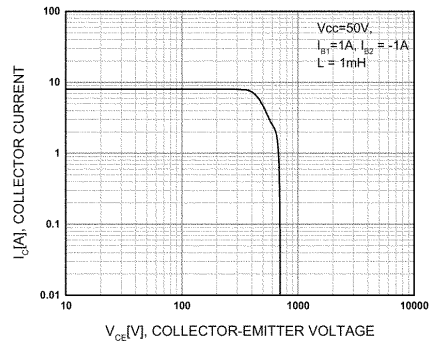
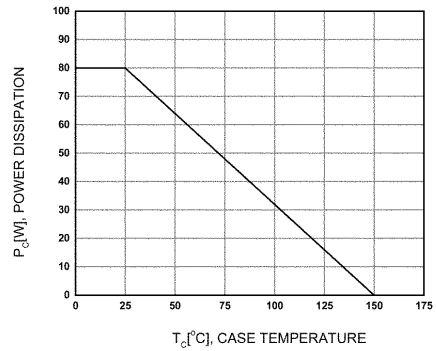


Figure 8. Power Derating



FJP13007 NPN Silicon Transistor



FUKUCOM COMPANY LTD.

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,
KWUN TONG, KOWLOON, HONG KONG.

TEL: 852-2790 0314 FAX: 852-2790 0206

FJP13007 NPN Silicon Transistor

TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx™	FAST®	ISOPLANAR™	Power247™	Stealth™
ActiveArray™	FASTr™	LittleFET™	PowerEdge™	SuperFET™
Bottomless™	FPS™	MICROCOUPLER™	PowerSaver™	SuperSOT™-3
CoolFET™	FRFET™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOL™	GlobalOptoisolator™	MicroPak™	QFET®	SuperSOT™-8
DOVE™	GTO™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	HiSeC™	MSX™	QT Optoelectronics™	TinyLogic®
E ² CMOS™	I ² C™	MSXPro™	Quiet Series™	TINYOPTO™
EnSigna™	i-Lo™	OCX™	RapidConfigure™	TruTranslation™
FACT™	ImpliedDisconnect™	OCXPro™	RapidConnect™	UHC™
FACT Quiet Series™		OPTOLOGIC®	μSerDes™	UltraFET®
Across the board. Around the world.™		OPTOPLANAR™	SILENT SWITCHER®	UniFET™
The Power Franchise®		PACMAN™	SMART START™	VCX™
Programmable Active Droop™		POP™	SPM™	

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

- Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
- A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

Rev. I14