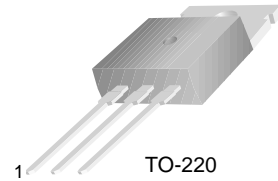


FJP5355

High Voltage Switch Mode Application

- High Speed Switching
- Very Low Switching Losses
- Very Low Operating Temperature
- Wide RBSOA



1.Base 2.Collector 3.Emitter

NPN Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	900	V
V_{CEO}	Collector-Emitter Voltage	440	V
V_{EBO}	Emitter- Base Voltage	14.5	V
I_C	Collector Current (DC)	5	A
I_{CP}	Collector Current (Pulse)	7.5	A
I_B	Base Current	2.5	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	50	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector- Base Breakdown Voltage	$I_C = 500\mu\text{A}, I_E = 0$	900			V
BV_{CEO}	Collector- Emitter Breakdown Voltage	$I_C = 5\text{mA}, I_B = 0$	440			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 500\mu\text{A}, I_C = 0$	14.5			V
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 12\text{V}, I_C = 0$			1	μA
h_{FE}	*DC Current Gain	$V_{CE} = 2\text{V}, I_C = 10\text{mA}$ $V_{CE} = 2\text{V}, I_C = 0.8\text{A}$ $V_{CE} = 2\text{V}, I_C = 2.5\text{A}$	15 15 7			
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = 0.8\text{A}, I_B = 0.2\text{A}$ $I_C = 2.5\text{A}, I_B = 0.8\text{A}$			0.2 0.4	V V
$V_{BE(sat)}$	*Base-Emitter Saturation Voltage	$I_C = 0.8\text{A}, I_B = 0.2\text{A}$ $I_C = 2.5\text{A}, I_B = 0.8\text{A}$			1.0 1.2	V V
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 0.2\text{A}$	4			MHz
t_{ON}	Turn On Time	$V_{CC} = 125\text{V}, I_C = 0.5\text{A}$			1.1	μs
t_{STG}	Storage Time	$I_{B1} = 45\text{mA}, -I_{B2} = 0.5\text{A}$ $PW=300\mu\text{s}$			1.2	μs
t_F	Fall Time				0.4	μs

* Pulse test: $PW \leq 300\mu\text{s}$, Duty cycle $\leq 2\%$

Typical Characteristics

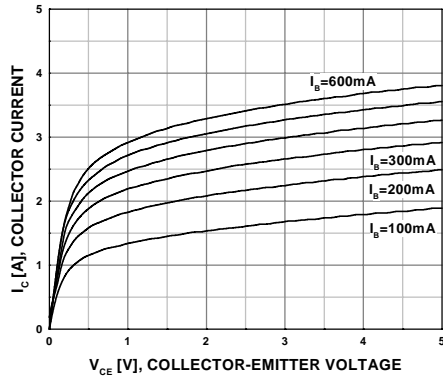


Figure 1. Static Characteristic

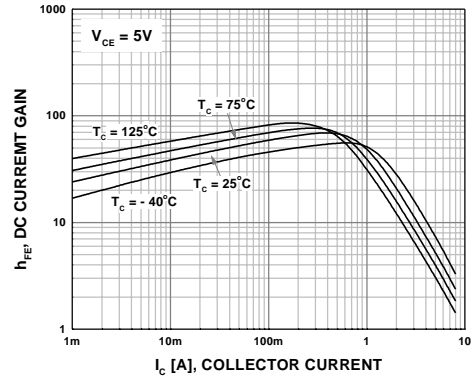


Figure 2. DC Current Gain

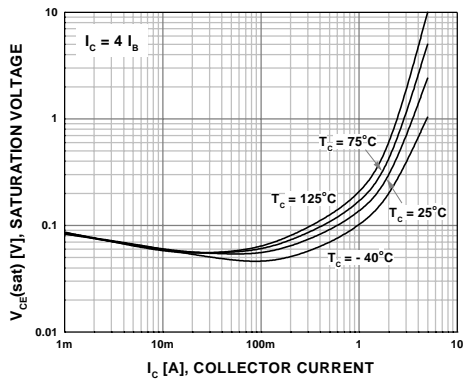


Figure 3. Saturation Voltage

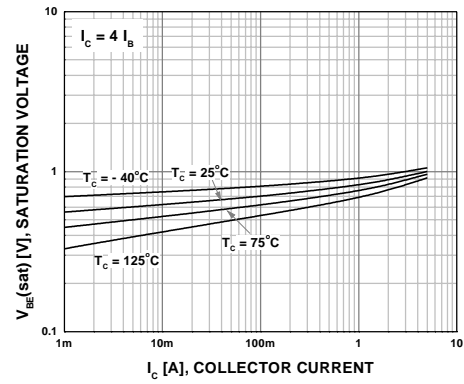


Figure 4. Saturation Voltage

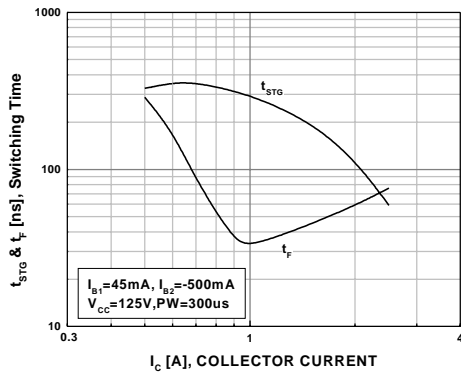


Figure 5. Resistive Load Switching

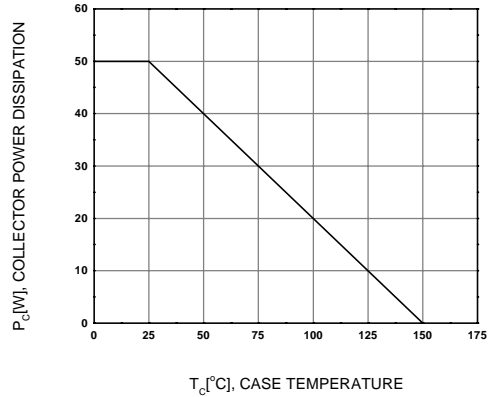


Figure 6. Power Derating Curve

Typical Characteristics (Continued)

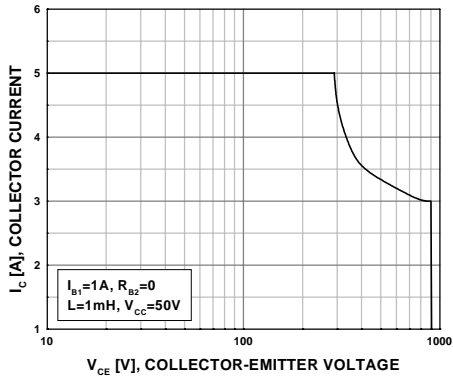


Figure 7. Reverse Biased Safe Operating Area

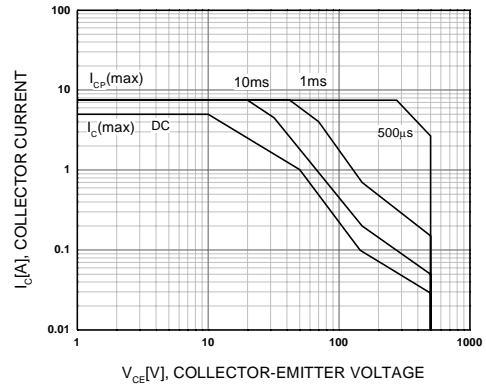


Figure 8. Forward Biased Safe Operating Area

Package Dimensions

FJP5355

TO-220



Dimensions in Millimeters

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.

ACE ^x TM	FACT Quiet Series TM	LittleFET TM	Power247 TM	SuperSOT TM -6
ActiveArray TM	FAST [®]	MICROCOUPLER TM	PowerTrench [®]	SuperSOT TM -8
Bottomless TM	FAST ^r TM	MicroFET TM	QFET [®]	SyncFET TM
CoolFET TM	FRFET TM	MicroPak TM	QS TM	TinyLogic [®]
CROSSVOL ^T TM	GlobalOptoisolator TM	MICROWIRE TM	QT Optoelectronics TM	TINYOPTO TM
DOME TM	GTO TM	MSX TM	Quiet Series TM	TruTranslation TM
EcoSPARK TM	HiSeC TM	MSXPro TM	RapidConfigure TM	UHC TM
E ² CMOS TM	I ² C TM	OCX TM	RapidConnect TM	UltraFET [®]
EnSigna TM	ImpliedDisconnect TM	OCXPro TM	SILENT SWITCHER [®]	VCX TM
FACT TM	ISOPLANAR TM	OPTOLOGIC [®]	SMART START TM	
Across the board. Around the world. TM		OPTOPLANAR TM	SPM TM	
The Power Franchise TM		PACMAN TM	Stealth TM	
Programmable Active Droop TM		POP TM	SuperSOT TM -3	

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.



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.