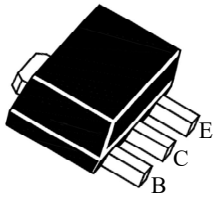
FCX605C3H

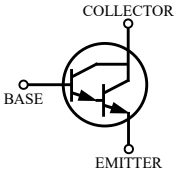
NPN DARLINGTON TRANSISTOR

FEATURES

· Low Saturation Voltage

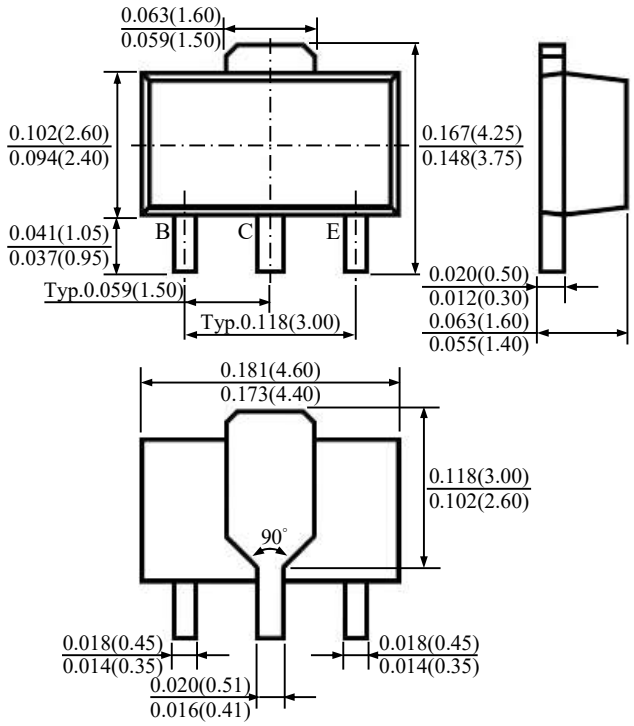
· Suffix "H" indicates Halogen-free parts, ex.FCX605C3H





B	Base
C	Collector
E	Emitter

SOT-89



Dimension in inches and (millimeters)

Maximum Ratings(T_A=25 ℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Collector Base Voltage		V_{CBO}	140	V
Collector Emitter Voltage		V_{CEO}	120	V
Emitter Base Voltage		V_{EBO}	10	V
Collector Current		I_C	1	A
Peak Collector Current		I_{CM}	4	A
Power Dissipation	(Note 1)	P_D	1.0	W
	(Note 2)		2.8	
Thermal Resistance from Junction to Ambient	(Note 1)	$R_{\theta JA}$	125	°C/W
	(Note 2)		45	
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	- 55 to + 150	℃

Note :

1. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
2. Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.

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Electrical Characteristics(T_A=25 ℃ unless otherwise specified)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain	V_{CE}=5V, I_C=50mA	h_{FE}	2,000	-	-	-
	V_{CE}=5V, I_C=500mA		5,000	-	-	
	V_{CE}=5V, I_C=1000mA		2,000	-	100,000	
	V_{CE}=5V, I_C=2000mA		500	-	-	
Collector Base Cutoff Current	V_{CB}=10V	I_{CBO}	-	-	100	nA
Emitter Base Cutoff Current	V_{EB}=8V	I_{EBO}	-	-	100	nA
Collector Base Breakdown Voltage	I_C=100μA	$V_{(BR)CBO}$	140	-	-	V
Collector Emitter Breakdown Voltage	I_C=10mA	$V_{(BR)CEO}$	120	-	-	V
Emitter Base Breakdown Voltage	I_E=100μA	$V_{(BR)EBO}$	10	-	-	V
Collector Emitter Saturation Voltage	I_C=250mA, I_B=0.25mA	$V_{CE(sat)}$	-	-	1.0	V
	I_C=1000mA, I_B=1mA		-	-	1.5	
Base Emitter Saturation Voltage	I_C=1000mA, I_B=1mA	$V_{BE(sat)}$	-	-	1.8	V
Base Emitter Turn-on Voltage	V_{CE}=5V, I_C=1000mA	$V_{BE(on)}$	-	-	1.7	V
Gain Bandwidth Product	V_{CE}=10V, I_C=100mA, f=20MHz	f_T	150	-	-	MHz
Input Capacitance	V_{CB}=0.5V, f=1MHz	C_{ibo}	-	90	-	pF
Output Capacitance	V_{CB}=10V, f=1MHz	C_{obo}	-	15	-	pF
Turn-on Time	V_{CE}=10V, I_C=500mA, I_{B1}=I_{B2}=0.5mA	$t_{(on)}$	-	0.5	-	μs
Turn-off Time		$t_{(off)}$	-	1.6	-	μs

RATINGS AND CHARACTERISTIC CURVES

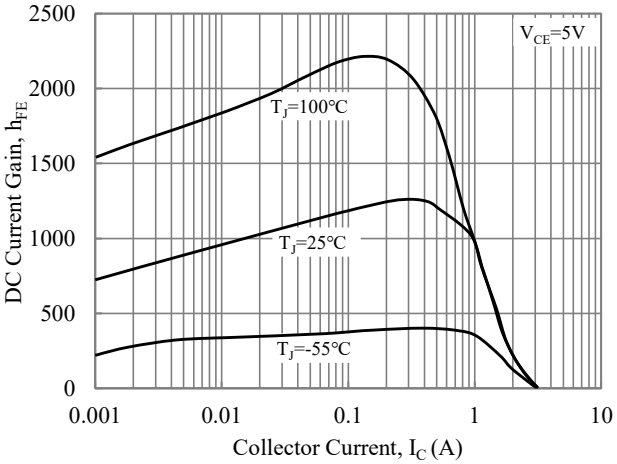

Fig. 1 Current Gain vs. Collector Current

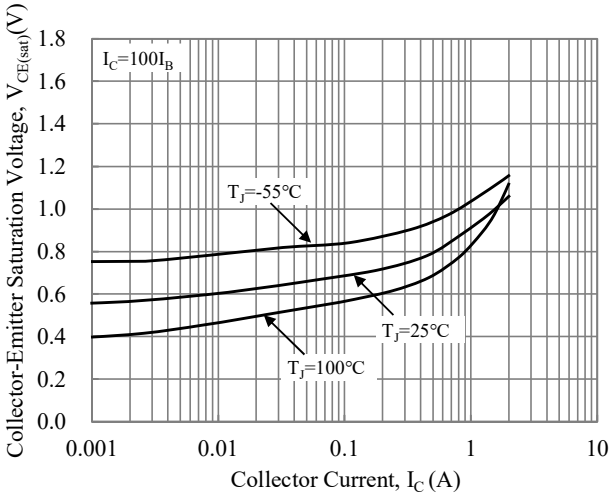

Fig. 2 Collector-Emitter Saturation Voltage vs. Collector Current

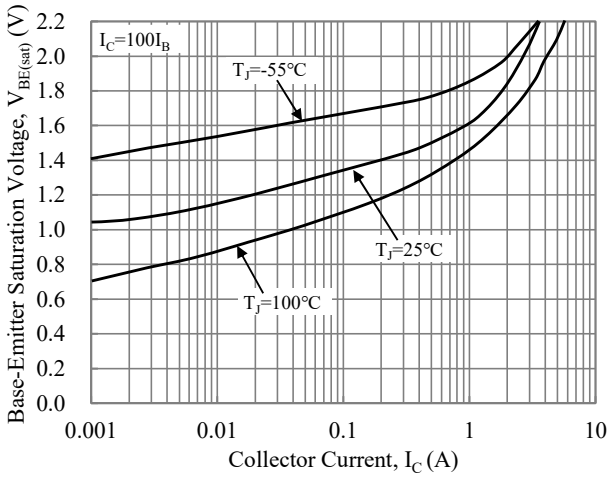

Fig. 3 Base-Emitter Saturation Voltage vs. Collector Current

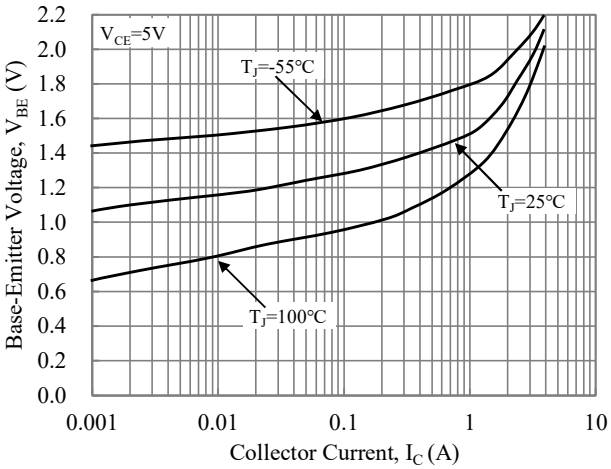

Fig. 4 Base-Emitter Voltage vs. Collector Current

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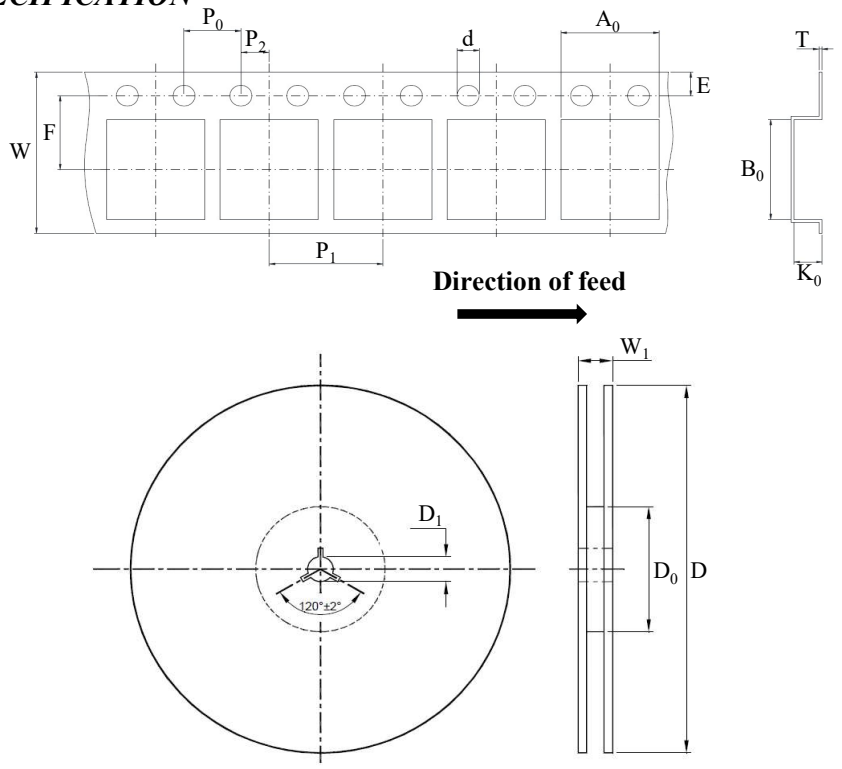
TAPE & REEL SPECIFICATION



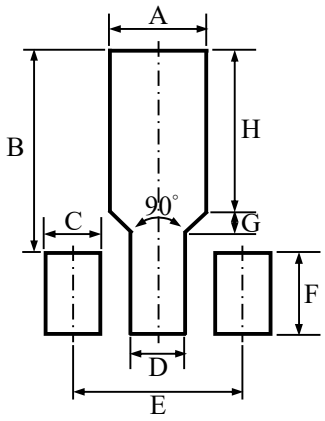
Item	Symbol	SOT-89
Carrier width	A_0	*
Carrier length	B_0	
Carrier depth	K_0	
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	330.00 ± 2.00
Feed hole width	D_0	100.00
Reel inner diameter	D_1	16.40 ± 0.50
Sprocke hole position	E	1.75 ± 0.10
Punch hole position	F	5.50 ± 0.10
Sprocke hole pitch	P_0	4.00 ± 0.10
Punch hole pitch	P_1	8.00 ± 0.10
Embossment center	P_2	2.00 ± 0.10
Overall tape thickness	T	0.25 ± 0.05
Tape width	W	12.00 ± 0.20
Reel width	W_1	MAX. 20.00

Note *: A_0, B_0, and K_0 are determined by component size. The clearance between the components and the cavity must be within 0.05 mm min. to 0.5 mm max.

ORDER INFORMATION

Part Number	Marking Code	Reel Size	Quantity
FXC605C3H-7	FXC605U	7"	1,000
FXC605C3H-13		13"	4,000

SUGGESTED SOLDER PAD LAYOUT



Unit:mm

PACKAGE	A	B	C	D	E	F	G	H
SOT-89	1.80	3.80	1.00	1.00	3.00	1.50	0.40	3.00