Silicon NPN Triple Diffused Character Display Horizntal Deflection Output

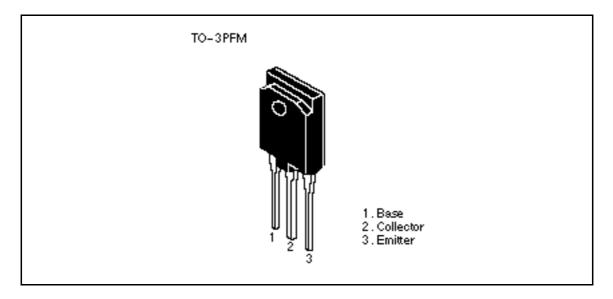
HITACHI

ADE-208-578 B (Z) 3rd. Edition September 1997

Features

- High breakdown voltage $V_{CBO} = 1500 \text{ V}$
- High speed switching $t_f = 0.15 \ \mu sec \ (typ.)$ at $f_H = 64 \ kHz$
- Isolated package TO–3PFM

Outline





Absolute Maximum Ratings (Ta = 25° C)

Item	Symbol	Ratings	Unit	
Collector to base voltage	V _{CBO}	1500	V	
Collector to emitter voltage	V _{CEO}	700	V	
Emitter to base voltage	V _{EBO}	6	V	
Collector current	Ι _c	12	А	
Collector peak current	İ _{c(peak)}	24	А	
Collector power dissipation	P _C ^{Note1}	50	W	
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	-55 to +150	°C	

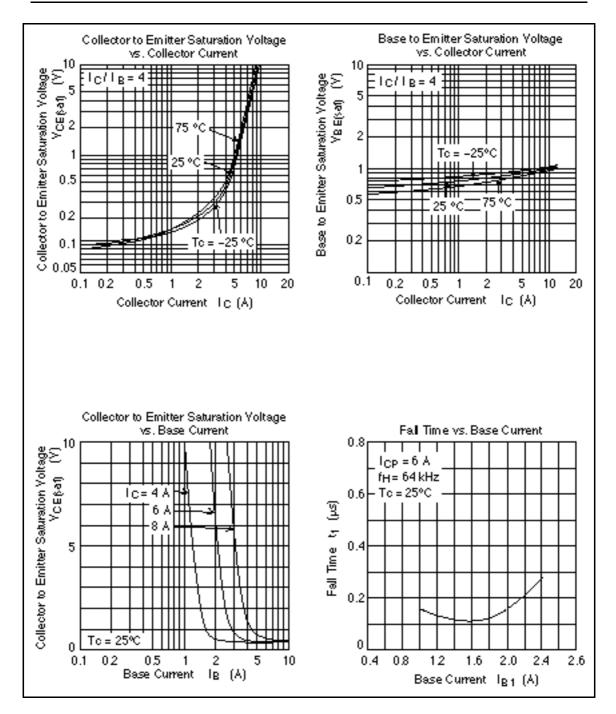
Note: 1. Value at $Tc = 25^{\circ}C$

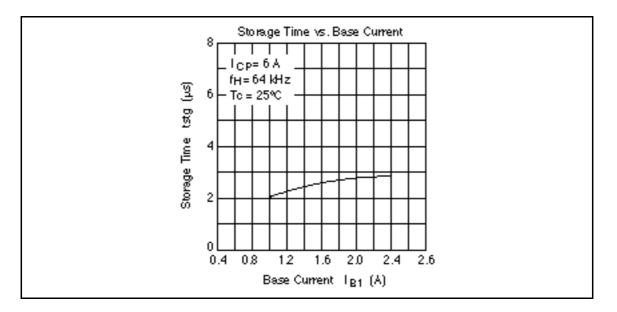
Electrical Characteristics ($Ta = 25^{\circ}C$)

Item	Symbol	Min	Тур	Max	Unit	Test Conditions
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	700	_	_	V	$I_c = 10mA$, $R_{BE} =$
Emitter to base breakdownvoltage	$V_{(BR)EBO}$	6	_	_	V	$I_{\rm E} = 10$ mA, $I_{\rm C} = 0$
Collector cutoff current	I _{CES}	_	_	500	μΑ	$V_{ce} = 1500V, R_{be} = 0$
DC current transfer ratio	h_{FE1}	10	_	30		$V_{ce} = 5 \text{ V}, I_c = 1 \text{A}$
DC current transfer ratio	h_{FE2}	3.5	_	6.5		$V_{ce} = 5 \text{ V}, I_c = 7 \text{A}$
Collector to emitter saturationvoltage	$V_{\text{CE(sat)}}$		_	5	V	$I_{\rm c} = 7A, I_{\rm B} = 1.8A$
Base to emitter saturationvoltage	$V_{\text{BE(sat)}}$	—	_	1.5	V	$I_{c} = 7A, I_{B} = 1.8A$
Fall time	t _f	—	0.2	0.4	μs	$I_{_{\rm CP}} = 6A, I_{_{\rm B1}} = 2A$ $f_{_{\rm H}} = 31.5 {\rm kHz}$
Fall time	t _f	_	0.15		μs	$I_{CP} = 6A, I_{B1} = 1.5A$ $f_{H} = 64kHz$

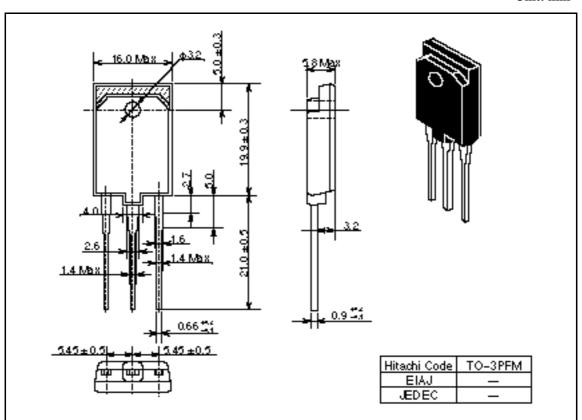
Collector Power Dissipation vs. Temperature Area of Safe Operaion 50 80 Pc (W) \mathbf{H} 20 Collector Current I_C (A) 60 10 **Collector Power Dissipation** 5 40 Ш 2 $\|$ $\begin{array}{l} L = \ 180 \ \mu H \\ I_{B2} = \ -1 \ A \\ duty < \ 1 \ \% \\ Tc = \ 25 \ \% \end{array}$ 20 0.5 П 0.2 0.1 0 150 200 50 100 100 5000 10 1000 Tc (°C) Case Temperature Collector to Emitter Voltage VCE (V) DC Current Transfer Ratio vs. Typical Output Characteristics Collector Current 100 10 цЦ 50 5 °C € DC Current Transfer Ratio <u>0</u> 20 Collector Current 10 5 25 ó. 2 ٩Ô 0.5 5 To = -25 °C* 2 11111 Y_{CE} = 5 ٧ Tc = 25 °C 1B=0 1 0 5 10 2 5 10 20 0.1 02 0.5 1 Collector Current I_C (A) Collector to Emitter Voltage VCE (V)

Main Characteristics





Package Dimensions



Unit: mm

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