

TRIPLE DIFFUSED PLANER TYPE
HIGH CURRENT, HIGH SPEED SWITCHING

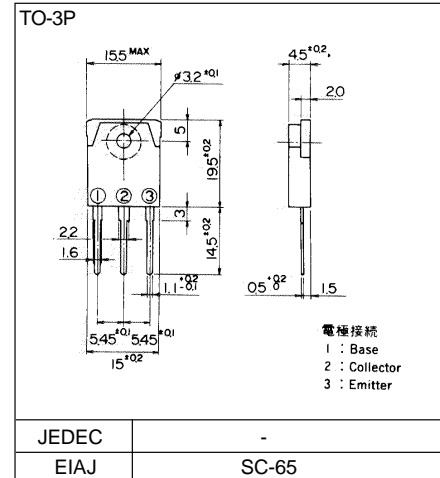
Features

- High current, High speed switching
- High reliability

Applications

- Switching regulators
- Motor controls
- High frequency inverters
- General purpose power amplifiers

Outline Drawings



Maximum ratings and characteristics

- Absolute maximum ratings ($T_c=25^\circ\text{C}$ unless otherwise specified)

Item	Symbol	Ratings	Unit
Collector-Base voltage	V_{CB0}	120	V
Collector-Emitter voltage	V_{CE0}	80	V
Emitter-Base voltage	V_{EB0}	7	V
Collector current	I_C	25	A
Base current	I_B	5	A
Collector power dissipation	P_C	80	W
Operating junction temperature	T_j	+150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

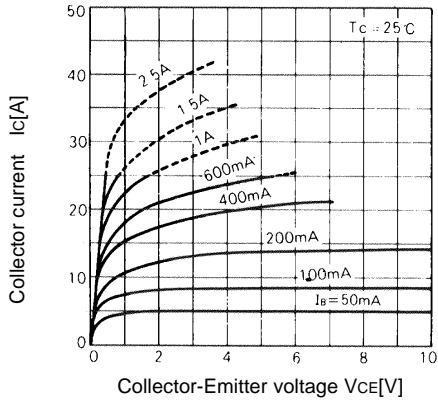
- Electrical characteristics ($T_c = 25^\circ\text{C}$ unless otherwise specified)

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector-Base voltage	V_{CB0}	$I_{CBO} = 0.1\text{mA}$	120			V
Collector-Emitter voltage	V_{CE0}	$I_{CEO} = 10\text{mA}$	80			V
Emitter-Base voltage	V_{EB0}	$I_{EBO} = 0.1\text{mA}$	7			V
Collector-Base leakage current	I_{CBO}	$V_{CB0} = 120\text{V}$			0.1	mA
Emitter-Base leakage current	I_{EBO}	$V_{EB0} = 7\text{V}$			0.1	mA
D.C. current gain	h_{FE}	$I_C = 25\text{A}, V_{CE} = 5\text{V}$	20			
Collector-Emitter saturation voltage	$V_{CE(Sat)}$	$I_C = 25\text{A}, I_B = 2.5\text{A}$			1.5	V
Base-Emitter saturation voltage	$V_{BE(Sat)}$				2.0	V
*1 Switching time	t_{on}	$I_C = 25\text{A}, I_{B1} = -I_{B2} = 2.5\text{A}$			1.0	μs
	t_{stg}	$R_L = 3\ \text{ohm}, P_w = 20\ \mu\text{s}, \text{Duty} = <2\%$			2.5	μs
	t_f				0.4	μs

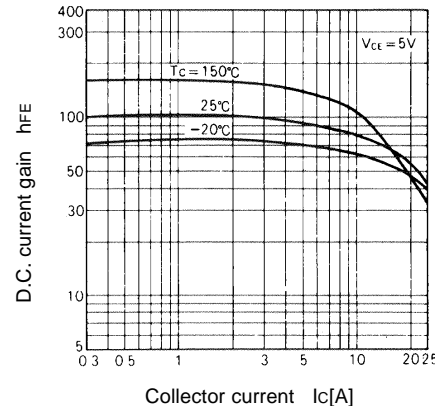
- Thermal characteristics

Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	$R_{th(j-c)}$	Junction to case			1.55	$^\circ\text{C/W}$

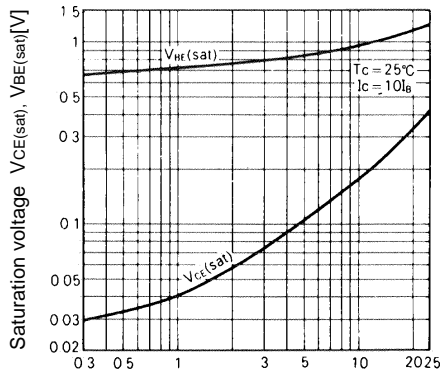
Characteristics



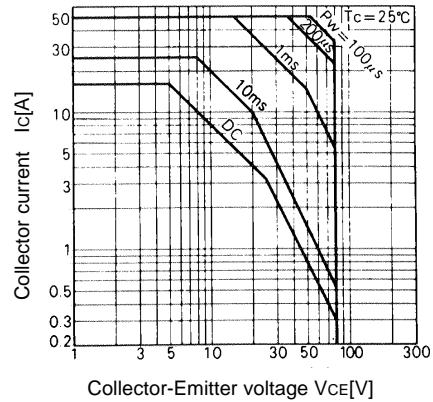
Collector Output Characteristics



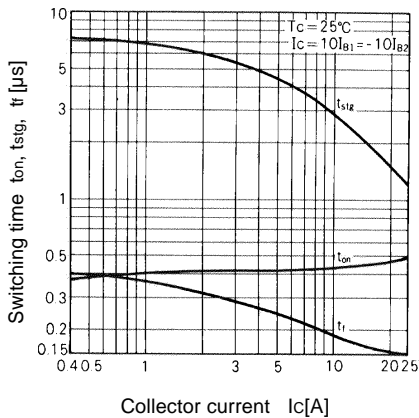
DC Current Gain



Base and Collector Saturation Voltage



Safe Operating Area



Switching Time

*1 Switching Time Test Circuit

