

## Silicon NPN Power Transistors

2SD1877

## DESCRIPTION

- With TO-3PML package
- High speed
- High breakdown voltage
- High reliability
- Built-in damper diode

## APPLICATIONS

- Color TV horizontal deflection output
- Color display horizontal deflection output

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

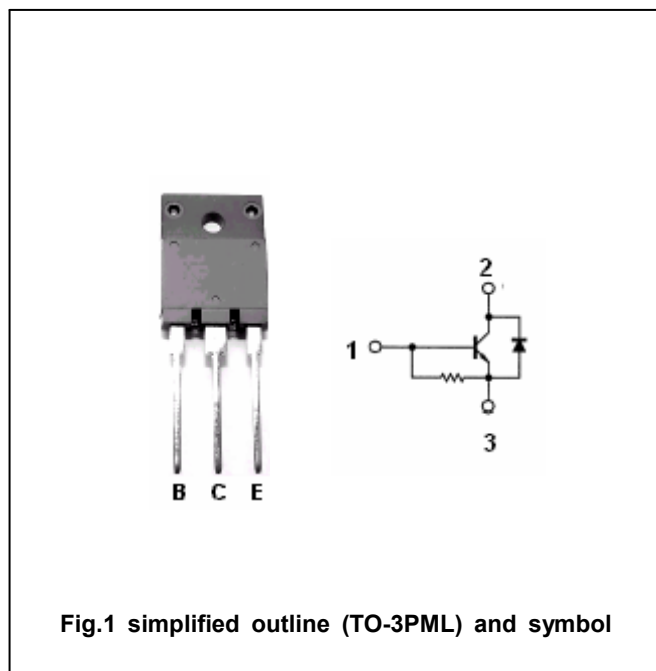


Fig.1 simplified outline (TO-3PML) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	1500	V
$V_{CEO}$	Collector-emitter voltage	Open base	800	V
$V_{EBO}$	Emitter-base voltage	Open collector	6	V
$I_C$	Collector current		4	A
$I_{CM}$	Collector current-peak		12	A
$P_C$	Collector power dissipation		50	W
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^\circ\text{C}$

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## CHARACTERISTICS

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 $T_j=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-emitter sustaining voltage	$I_C=100\text{mA}; I_B=0$	800			V
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C=2.5\text{A}; I_B=0.8\text{A}$			5	V
$V_{BEsat}$	Base-emitter saturation voltage	$I_C=2.5\text{A}; I_B=0.8\text{A}$			1.5	V
$I_{CBO}$	Collector cut-off current	$V_{CB}=800\text{V}; I_E=0$			10	$\mu\text{A}$
$I_{CES}$	Collector cut-off current	$V_{CB}=1500\text{V}; R_{BE}=0$			1.0	mA
$I_{EBO}$	Emitter cut-off current	$V_{EB}=4\text{V}; I_C=0$	40		130	mA
$h_{FE-1}$	DC current gain	$I_C=0.5\text{A}; V_{CE}=5\text{V}$	8			
$h_{FE-2}$	DC current gain	$I_C=2.5\text{A}; V_{CE}=5\text{V}$	3.5		7	
$V_F$	Diode forward voltage	$I_{EC}=4\text{A}$			2.0	V
$t_f$	Fall time	$I_C=3\text{A}; R_L=50\Omega$ $I_{B1}=0.8\text{A}; I_{B2}=-1.6\text{A}; V_{CC}=200\text{V}$		0.1	0.3	$\mu\text{s}$

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PACKAGE OUTLINE

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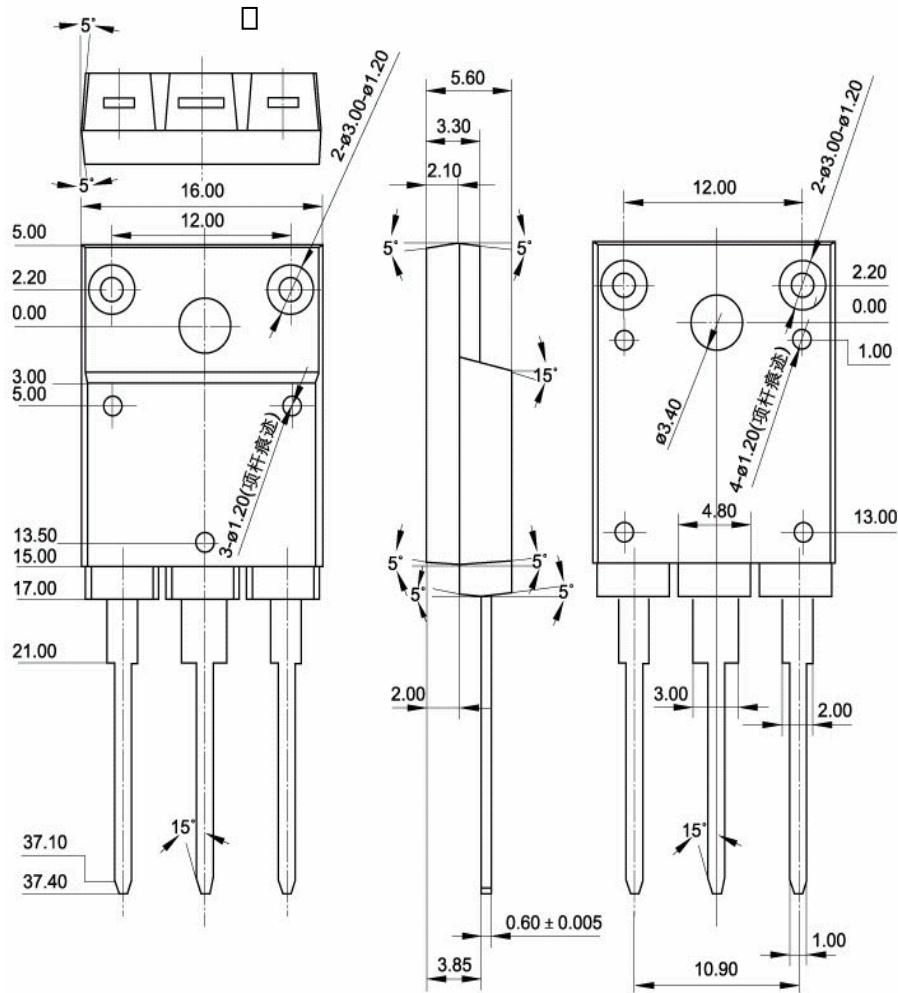


Fig.2 Outline dimensions

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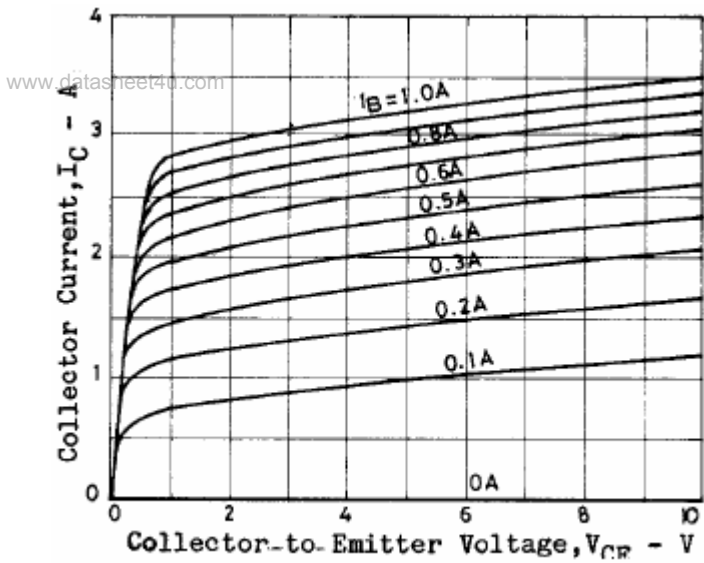


Fig.3 Static Characteristic

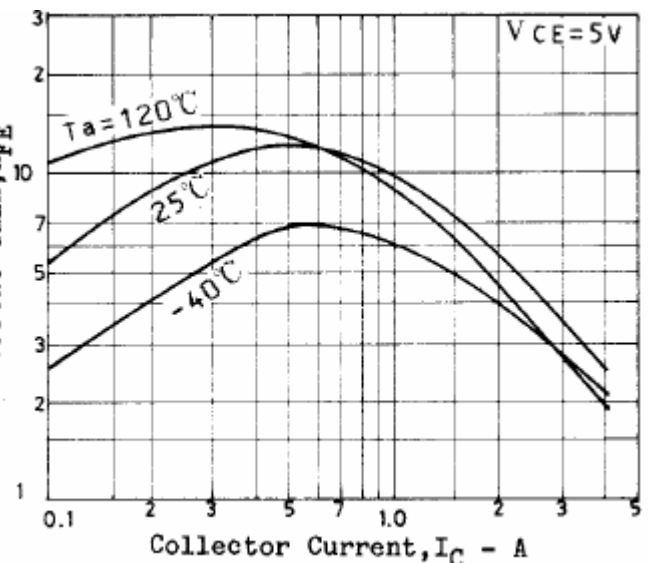


Fig.4 DC current Gain

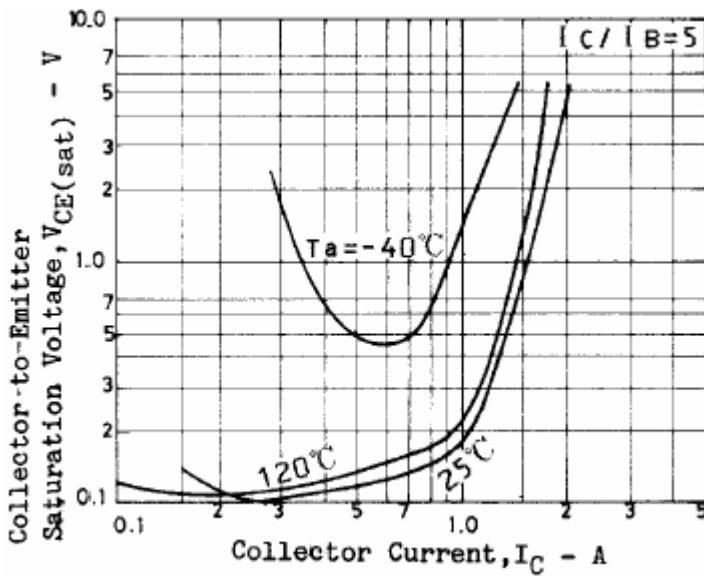


Fig.5 Collector-Emitter Saturation Voltage

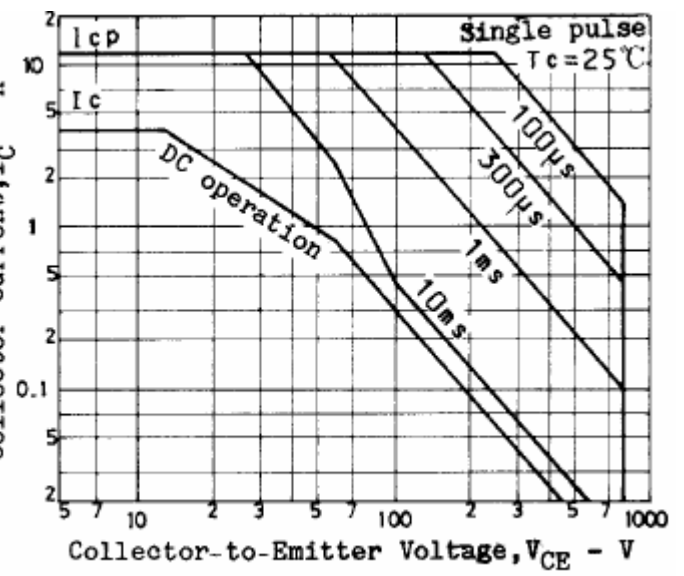


Fig.6 Safe Operating Area