

**Silicon NPN Power Transistors**

**2SD1650**

**DESCRIPTION**

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

**APPLICATIONS**

- For color TV horizontal output applications

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

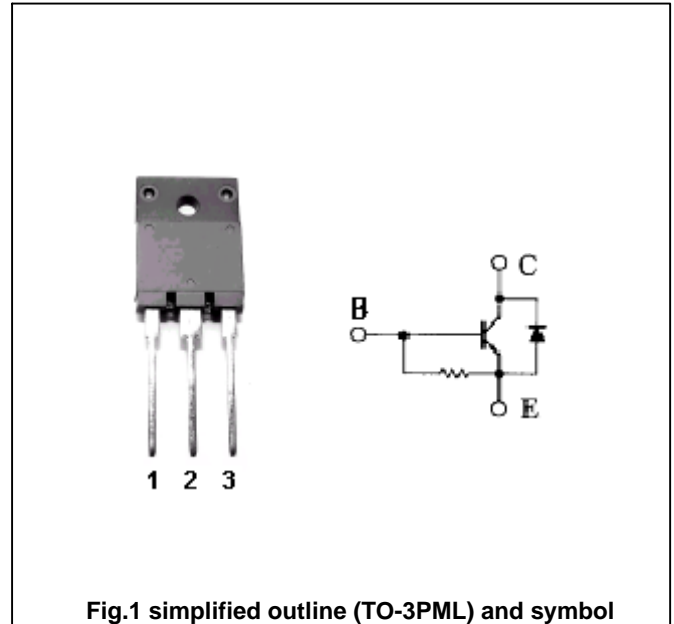


Fig.1 simplified outline (TO-3PML) and symbol

**ABSOLUTE MAXIMUM RATINGS AT Tc=25**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	1500	V
$V_{CEO}$	Collector-emitter voltage	Open base	800	
$V_{EBO}$	Emitter-base voltage	Open collector	6	V
$I_C$	Collector current		3.5	A
$P_C$	Collector power dissipation	$T_C=25$	50	W
$T_j$	Junction temperature		150	
$T_{stg}$	Storage temperature		-55~150	

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## CHARACTERISTICS

T<sub>j</sub>=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.1A , I <sub>B</sub> =0	800			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2.5A ; I <sub>B</sub> =0.8A		5.0	8.0	V
V <sub>BEsat</sub>	Emitter-base saturation voltage	I <sub>C</sub> =2.5A ; I <sub>B</sub> =0.8A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =800V; I <sub>E</sub> =0			10	μ A
I <sub>CES</sub>	Collector cut-off current	V <sub>CE</sub> =1500V; R <sub>BE</sub> =			1.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =4V; I <sub>C</sub> =0	40		130	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =5V	8			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V		3		MHz
V <sub>F</sub>	Diode forward voltage	I <sub>F</sub> =3.5A			2.0	V

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PACKAGE OUTLINE

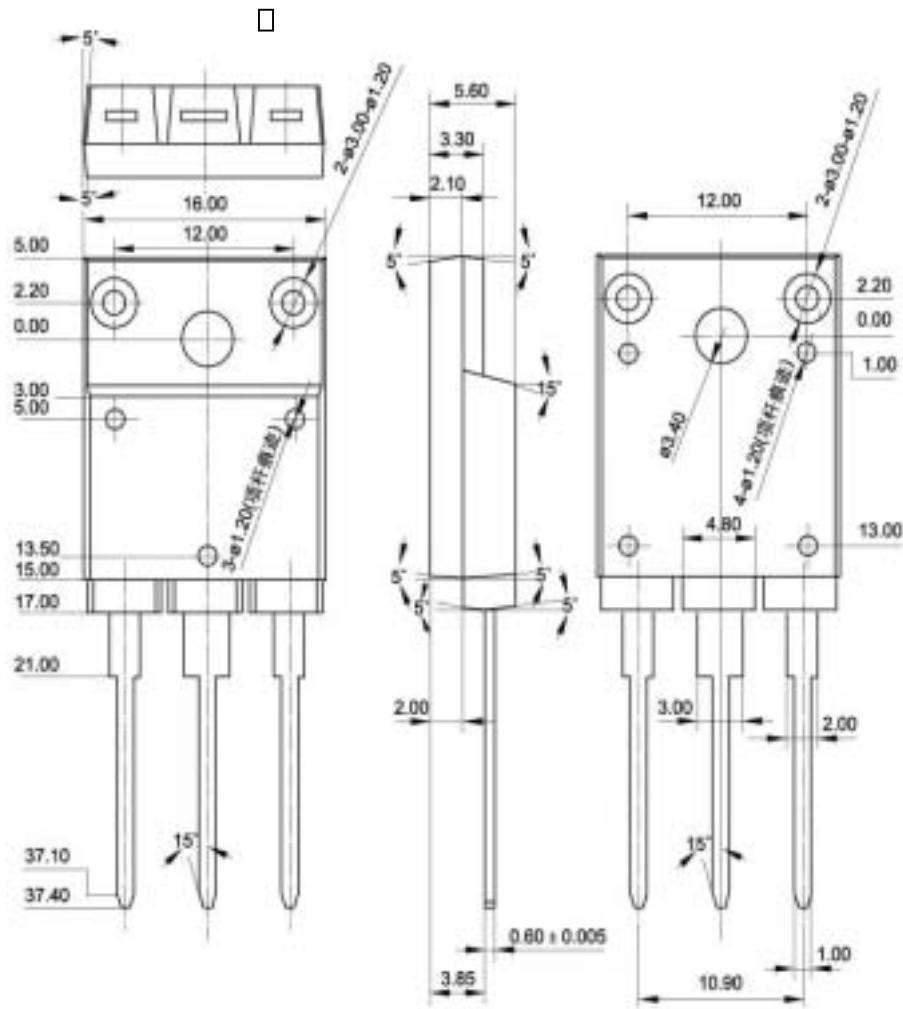


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.15$  mm)