

**isc Silicon NPN Power Transistor**
**2SD690**
**DESCRIPTION**

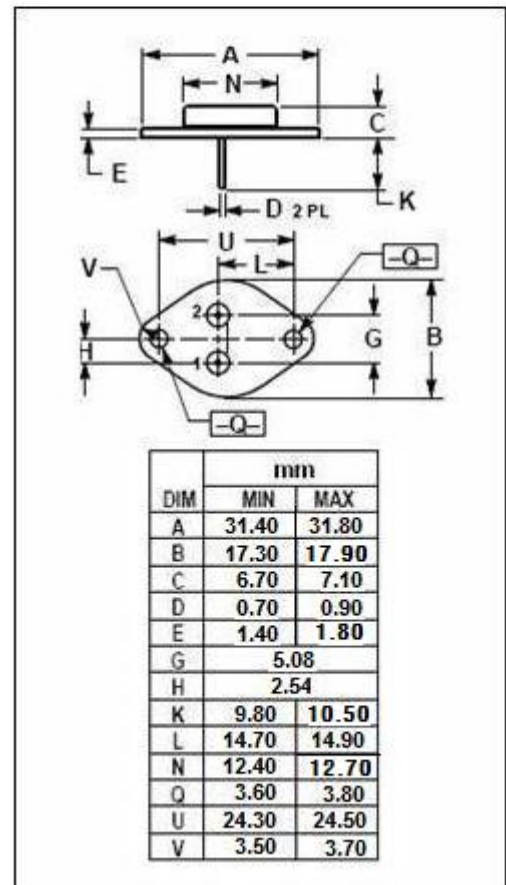
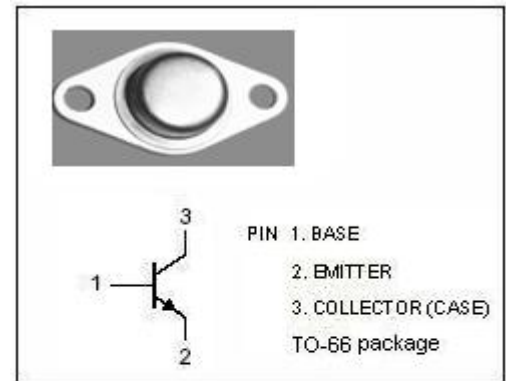
- Collector Current:  $I_C = 7A$
- Collector-Emitter Breakdown Voltage:  
:  $V_{(BR)CEO} = 70V(\text{Min.})$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Designed for TV horizontal deflection applications.

**ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	70	V
$V_{CEO}$	Collector-Emitter Voltage	70	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	7	A
$I_{CM}$	Collector Current-Peak	10	A
$P_C$	Total Power Dissipation @ $T_C = 25^\circ\text{C}$	40	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



## isc Silicon NPN Power Transistor

## 2SD690

## ELECTRICAL CHARACTERISTICS

T<sub>c</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 10mA ; R <sub>BE</sub> = ∞	70			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 1mA ; I <sub>C</sub> = 0	6			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 5A ; I <sub>B</sub> = 0.5A			1.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 5A ; I <sub>B</sub> = 0.5A			1.2	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 70V ; I <sub>E</sub> = 0			30	uA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V ; I <sub>C</sub> = 0			10	uA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 1A ; V <sub>CE</sub> = 1V	70		240	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 5A ; V <sub>CE</sub> = 1V	25			
Switching times						
t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 5A , I <sub>B1</sub> = I <sub>B2</sub> = 0.5A		0.2		μ s
t <sub>stg</sub>	Storage Time			2.5		μ s
t <sub>f</sub>	Fall Time			0.5		μ s

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