

isc Silicon NPN Darlington Power Transistor

2SD864

DESCRIPTION

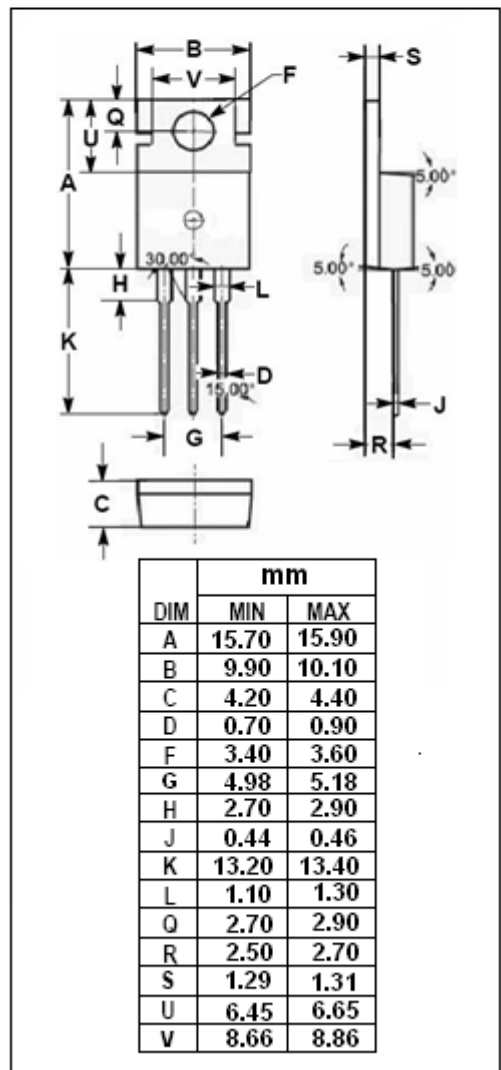
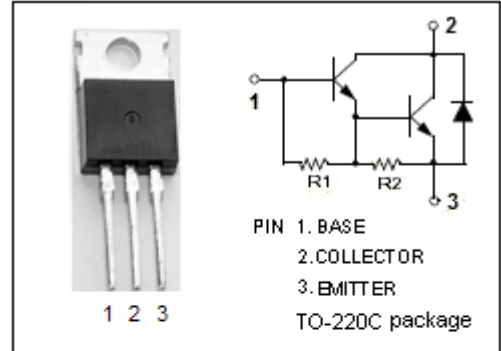
- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min}) @ I_C = 1.5\text{A}$
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 120\text{V}(\text{Min})$
- Low Collector-Emitter Saturation Voltage-  
:  $V_{CE(\text{sat})} = 1.5\text{V}(\text{Max}) @ I_C = 1.5\text{A}$
- Complement to Type 2SB765

APPLICATIONS

- Medium speed and power switching applications.

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	120	V
$V_{CEO}$	Collector-Emitter Voltage	120	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	3	A
$I_{CM}$	Collector Current-Peak	6	A
$P_C$	Collector Power Dissipation $T_C = 25^\circ\text{C}$	30	W
$T_j$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature Range	-55~150	°C



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=25\text{mA}$ , $R_{BE}=\infty$	120			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=50\text{mA}$ , $I_C=0$	7			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=1.5\text{A}$ , $I_B=-3\text{mA}$			1.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}$ , $I_B=-30\text{mA}$			3.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=1.5\text{A}$ , $I_B=-3\text{mA}$			2.0	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=3\text{A}$ , $I_B=-30\text{mA}$			3.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=120\text{V}$ , $I_E=0$			100	$\mu\text{A}$
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=100\text{V}$ , $R_{BE}=\infty$			10	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C=1.5\text{A}$ ; $V_{CE}=3\text{V}$	1000		20000	

## Switching times

$t_{on}$	Turn-on Time	$I_C=1.5\text{A}$ ; $I_{B1}=-I_{B2}=3\text{mA}$		0.5		$\mu\text{s}$
$t_{stg}$	Storage Time			4.5		$\mu\text{s}$
$t_f$	Fall Time			1.1		$\mu\text{s}$