

**isc Silicon NPN Darlington Power Transistor**

**2SD1525**

**DESCRIPTION**

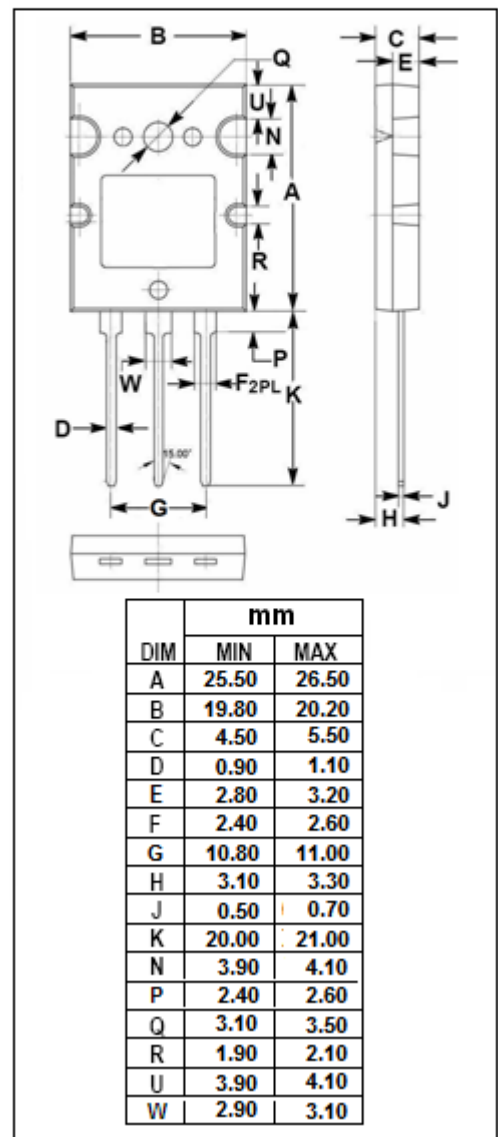
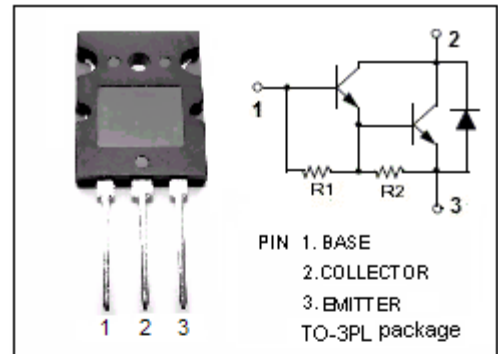
- High DC Current Gain  
:  $h_{FE} = 1000(\text{Min.}) @ I_C = 20A$
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 100V(\text{Min.})$

**APPLICATIONS**

- Designed for high current switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEO}$	Collector-Emitter Voltage	100	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	30	A
$I_B$	Base Current- Continuous	5	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	150	W
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



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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	$I_C=50\text{mA}$ , $I_B=0$	100			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=20\text{A}$ , $I_B=0.2\text{A}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=20\text{A}$ , $I_B=0.2\text{A}$			2.5	V
$I_{CBO}$	Collector Cutoff current	$V_{CB}=100\text{V}$ , $I_E=0$			0.1	mA
$I_{EBO}$	Emitter Cutoff current	$V_{EB}=5\text{V}$ , $I_C=0$			10	mA
$h_{FE-1}$	DC Current Gain	$I_C=20\text{A}$ ; $V_{CE}=5\text{V}$	1000			
$h_{FE-2}$	DC Current Gain	$I_C=30\text{A}$ ; $V_{CE}=5\text{V}$	200			
$V_{ECF}$	C-E Diode Forward Voltage	$I_F=10\text{A}$			3.0	V
$f_T$	Current-Gain—Bandwidth Product	$I_C=1\text{A}$ ; $V_{CE}=5\text{V}$		10		MHz
$C_{OB}$	Output Capacitance	$I_E=0$ ; $V_{CB}=10\text{V}$ ; $f_{test}=1\text{MHz}$		500		pF

## Switching Times

$t_{on}$	Turn-On Time	$I_{B1} = -I_{B2} = 10\text{mA}$ ; $V_{CC} = 50\text{V}$ ; $R_L = 10\Omega$		1.5		$\mu\text{s}$
$t_{stg}$	Storage Time			10		$\mu\text{s}$
$t_f$	Fall Time			1.5		$\mu\text{s}$