

# 2SD664

SILICON NPN TRIPLE DIFFUSED TYPE  
(DARLINGTON POWER)

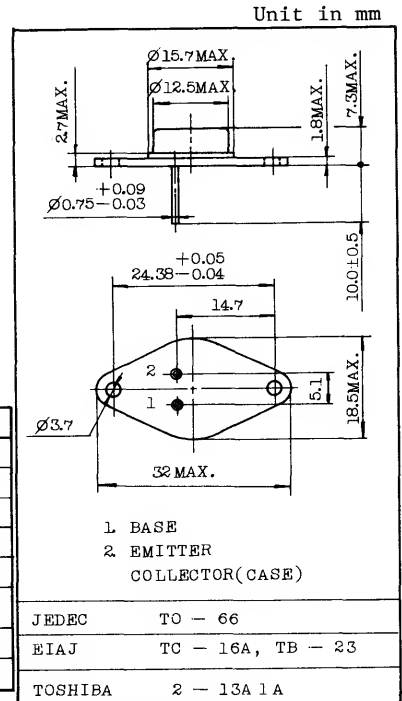
HIGH POWER SWITCHING APPLICATIONS.

FEATURES:

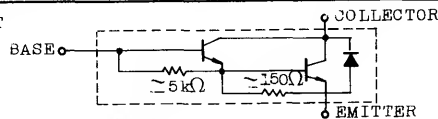
- High DC Current Gain  
:  $h_{FE}=2000(\text{Min.})(V_{CE}=3V, I_C=3A)$
- Low Saturation Voltage  
:  $V_{CE}(\text{sat})=1.5V(\text{Max.})(I_C=3A)$
- Monolithic Construction with Built-In Base-Emitter Shunt Resistor.

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$	80	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	7	A
Base Current	$I_B$	0.2	A
Collector Power Dissipation ( $T_c=25^\circ\text{C}$ )	$P_C$	40	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-65\sim 150$	$^\circ\text{C}$



EQUIVALENT CIRCUIT



Mounting Kit No. AC74  
Weight : 5.9g

ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB}=80V, I_E=0$	-	-	100	$\mu\text{A}$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB}=5V, I_C=0$	-	-	3	mA
Collector-Emitter Breakdown Voltage		$V(\text{BR})_{CEO}$	$I_C=50\text{mA}, I_B=0$	80	-	-	V
DC Current Gain		$h_{FE}(1)$	$V_{CE}=3V, I_C=3A$	2000	-	15000	
		$h_{FE}(2)$	$V_{CE}=3V, I_C=7A$	1000	-	-	
Collector-Emitter Saturation Voltage		$V_{CE}(\text{sat})(1)$	$I_C=3A, I_B=6\text{mA}$	-	0.9	1.5	V
		$V_{CE}(\text{sat})(2)$	$I_C=7A, I_B=14\text{mA}$	-	1.2	2.0	
Base-Emitter Saturation Voltage		$V_{BE}(\text{sat})$	$I_C=3A, I_B=6\text{mA}$	-	1.5	2.5	V
Switching Time	Turn-on Time	$t_{on}$	<p><math>I_{B1} = -I_{B2} = 6\text{mA}</math> DUTY CYCLE <math>\leq 1\%</math></p>	-	0.8	-	$\mu\text{s}$
	Storage Time	$t_{stg}$		-	3.0	-	
	Fall Time	$t_f$		-	2.5	-	

