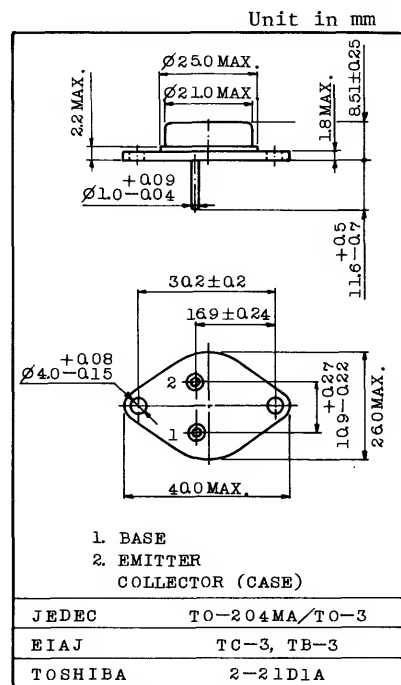


HIGH POWER SWITCHING, AMPLIFIER, DC-DC CONVERTER,
INVERTER AND REGULATOR APPLICATIONS

FEATURES:

- High Collector-Emitter Sustaining Voltage:
 $V_{CEO(SUS)} = 80V$ (Min.) @ $I_C = 200mA$, $I_B = 0$
- Specification for h_{FE} and $V_{CE(sat)}$ Up to 20A:
 $h_{FE} = 5.0$ (Min.) @ $V_{CE} = 4.0V$, $I_C = 20A$
 $V_{CE(sat)} = 2.0V$ (Max.) @ $I_C = 20A$, $I_B = 4.0A$
- Low Saturation Voltage:
 $V_{CE(sat)} = 0.75V$ (Max.) @ $I_C = 10A$, $I_B = 1.0A$
 $V_{BE(sat)} = 1.7V$ (Max.) @ $I_C = 10A$, $I_B = 1.0A$
- High Collector Power Dissipation Capability:
 $P_C = 200W$ (Max.)



Weight : 12.6g

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	80	V
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	80	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	20	A
	Peak	I_{CM}	40	A
Base Current		I_B	7.5	A
Collector Power Dissipation ($T_c = 25^\circ C$)		P_C	200	W
Derate above $25^\circ C$			1.14	W/ $^\circ C$
Junction Temperature		T_j	200	$^\circ C$
Storage Temperature Range		T_{stg}	-65 ~ 200	$^\circ C$

※ In Accordance with JEDEC Registration Data format JS-6 RDG-2.

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
* Collector Cut-off Current	I_{CBO}	$V_{CB}=80\text{V}$, $I_E=0$	-	-	1.0	mA
* Collector Cut-off Current	I_{CEX}	$V_{CE}=80\text{V}$, $V_{BE}=-1.5\text{V}$	-	-	1.0	mA
* Collector Cut-off Current	I_{CEX}	$V_{CE}=80\text{V}$, $V_{BE}=-1.5\text{V}$, $T_c=150^{\circ}\text{C}$	-	-	10	mA
* Collector Cut-off Current	I_{CEO}	$V_{CE}=80\text{V}$, $I_B=0$	-	-	5.0	mA
* Emitter Cut-off Current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0$	-	-	5.0	mA
* Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	$I_C=200\text{mA}$, $I_B=0$	80	-	-	V
* DC Current Gain	h_{FE}	$V_{CE}=2.0\text{V}$, $I_C=1.0\text{A}$	40	-	-	
		$V_{CE}=2.0\text{V}$, $I_C=10\text{A}$	15	-	60	
		$V_{CE}=4.0\text{V}$, $I_C=20\text{A}$	5.0	-	-	
* Base-Emitter Voltage	V_{BE}	$V_{CE}=2.0\text{V}$, $I_C=10\text{A}$	-	-	1.5	V
		$V_{CE}=4.0\text{V}$, $I_C=20\text{A}$	-	-	2.5	V
* Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{A}$, $I_B=1.0\text{A}$	-	-	1.0	V
		$I_C=15\text{A}$, $I_B=1.5\text{A}$	-	-	1.5	V
		$I_C=20\text{A}$, $I_B=4.0\text{A}$	-	-	2.0	V
* Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10\text{A}$, $I_B=1.0\text{A}$	-	-	1.7	V
		$I_C=15\text{A}$, $I_B=1.5\text{A}$	-	-	2.0	V
		$I_C=20\text{A}$, $I_B=4.0\text{A}$	-	-	2.5	V
* Transition Frequency	f_T	$V_{CE}=10\text{V}$, $I_C=1.0\text{A}$, $f=1.0\text{MHz}$	2.0	-	-	MHz
* Small-Signal Current Gain	h_{fe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{A}$, $f=1.0\text{kHz}$	40	-	-	
* Switching Time	Rise Time	t_r	See Fig.1-1	-	1.0	μs
	Storage Time	t_{stg}	See Fig.1-2	-	2.0	μs
	Fall Time	t_f		-	1.0	μs

*In Accordance with JEDEC Registration Data Format JS-6 RDF-1.

***The sustaining voltage $V_{CEO(SUS)}$ MUST NOT be measured on a curve tracer.

Fig.1 SWITCHING TIME EQUIVALENT TEST CIRCUITS

Fig.1-1 TURN-ON TIME

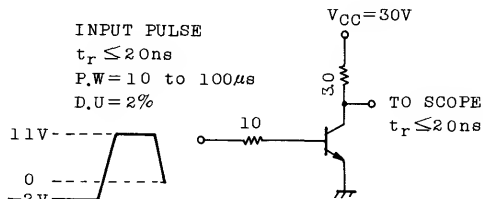


Fig.1-2 TURN-OFF TIME

