

I. HYBRID ICs FOR BASE DRIVING OF POWER TRANSISTOR MODULE

1.1 Fuji Base Driver Module (Hybrid IC) EXB356

\* Abstract

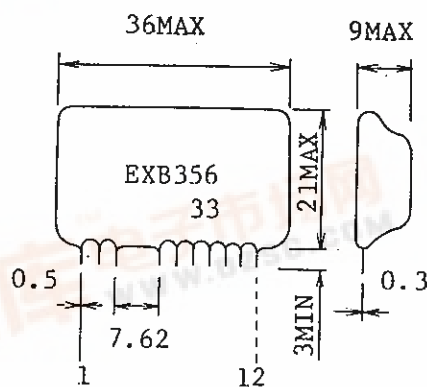
The EXB356 is a hybrid - IC base driver used in Fuji transistor modules. It includes opto-couplers for the electrical isolation between in-put side and output side of base drive circuit and can drive a wide range of transistor modules. The driver is contained in a small-sized 10-pin, in-line package and is most suitable for transistor inverters.

\* Special features

- Includes opto-coupler; input and output are isolated electrically. (2500 VAC/1min.)
- IC has a high output current. ( $I_{B1} = 1.3 \text{ A}$ .  $I_{B2} = 3.4 \text{ A}$ )
- Drives high  $dv/dt$  (4000 V / $\mu\text{s}$ )
- Short switching time. ( $t_{\text{stg}} < 5.0 \mu\text{s}$ )
- CMOS and TTL drives are available

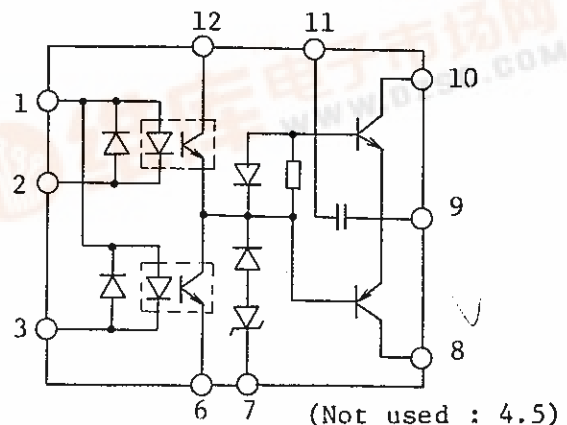
\* Applications

Drive for transistors such as transistor inverters.



Pitch 2.54 (Unit: mm)

External View



(Not used : 4.5)

Circuit diagram



\* Ratings and Characteristics

Absolute maximum rating. (Ta = 25°C)

Item	Symbol	Condition	Rating	Units
Forward bias supply-voltage	VCC		10	V
Reverse bias supply-voltage	VEE		-10	V
Input current	IIN		2.6~9	mA
Forward bias output current	IB1	duty=0.5	1.3	A
Reverse bias output current	IB2	PW=20 $\mu$ s, f=2.5KHZ MAX	3.4	A
Power dissipation	PD	Ta=55°C	0.7	W
Isolation voltage	VISO	AC50/60HZ,1min	2500	V
Operating ambient temperature	Ta		-10~55	°C
Surface temperature while operating	Tc		-10~85	°C
Storage temperature	Tstg		-25~125	°C

Electrical characteristics. ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Condition	Value			Units
			MIN	TYP	MAX	
Delay time	$t_d$		-	-	5.0	$\mu\text{s}$
Rise time	$t_r$		-	-	1.0	$\mu\text{s}$
Storage time	$t_{stg}$		-	-	5.0	$\mu\text{s}$
Reverse bias current descent rating	$-dib2/dt$		2.0	-	-	$\text{A}/\mu\text{s}$
dv/dt capability for input and output	dv/dt		4000	-	-	$\text{V}/\mu\text{s}$

\* Conditions

- . Case temperature. ( $T_C$ ) =  $-10^\circ\text{C} \sim 85^\circ\text{C}$
- . Junction temperature of driving transistor ( $T_j$ ) =  $-10 \sim 130^\circ\text{C}$
- . Driving wire length between base drive circuit and driven transistor module must be less than 30 cm.
- . Cut-off current must be less than 150 A.
- .  $V_{OC} = V_{EE} = 8.5 \text{ V} \pm 15 \%$
- .  $R_F = 6.8 \Omega$   $R_R = 3.3 \Omega$
- . Input current of base drive module

\* Application circuit

