

TD62501F~TD62507F

BIPOLAR DIGITAL INTEGRATED CIRCUIT
SILICON MONOLITHIC

SINGLE DRIVE

TD62501F COMMON EMITTER
TD62502F COMMON EMITTER
TD62503F COMMON EMITTER
TD62504F COMMON EMITTER
TD62505F COMMON COLLECTOR
TD62506F COMMON COLLECTOR
TD62507F ISOLATED

Features

- Output Current 200mA Max.
- High Voltage Outputs 35V
- Input Compatible with Various Types of Logic
 - TD62501F Using external resistor
 - TD62505F General Purpose
 - TD62507F
 - TD62502F $R_{IN}=10.5k\Omega+7V$ Zener Diode..14~25V P-MOS
 - TD62503F $R_{IN}=2.7k\Omega$ TTL, 5V C-MOS
 - TD62506F $R_{IN}=10.5k\Omega$ 6~15V P-MOS, C-MOS
 - TD62504F

Description

The TD62501F Series are comprised of seven or five NPN Transistor Arrays.
For proper operation, the substrate (SUB) must be connected to the most negative voltage.

MAXIMUM RATINGS (Ta=25°C, unless otherwise noted)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V_{CE0}	35	V
Collector-Base Voltage	V_{CB0}	50	V
Collector Current	I_C	200	mA
Input Voltage	V_{IN}^*	-0.5~+45	V
	V_{IN}^{**}	-0.5~+30	
Input Current	I_{IN}^{***}	25	mA
Isolation Voltage	V_{SUB}	35	V
GND Terminal Voltage	I_{GND}	500	mA
Power Dissipation	P_D^{****}	0.625	W
Operating Temperature	T_{opr}	-40~85	°C
Storage Temperature	T_{stg}	-55~150	°C

* TD62506F

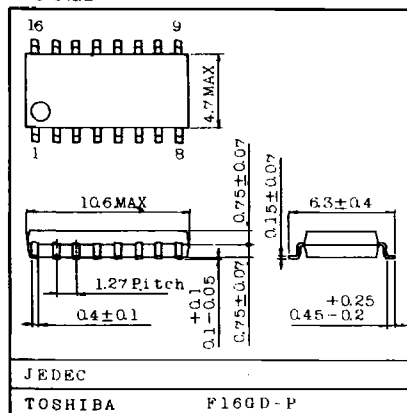
** TD62502F, TD62503F, TD62504F

*** TD62501F, TD62505F, TD62507F

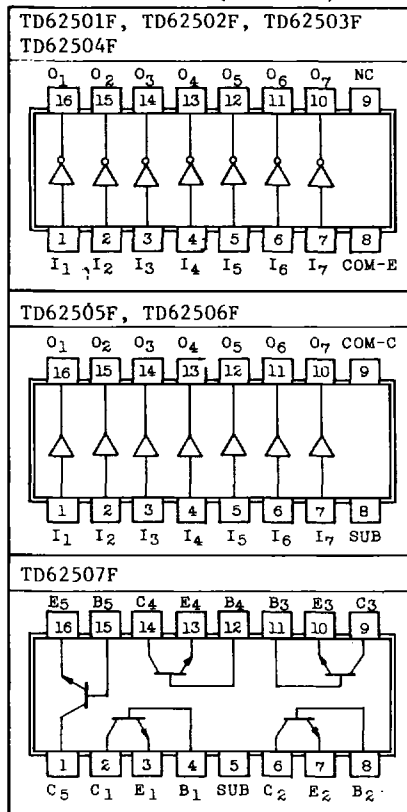
**** On Glass Epoxy PCB (20×20×1.6mm)

PACKAGE

Unit in mm

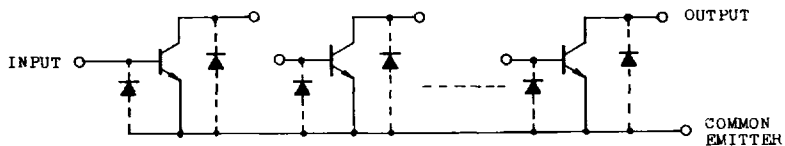


PIN CONNECTIONS (TOP VIEW)

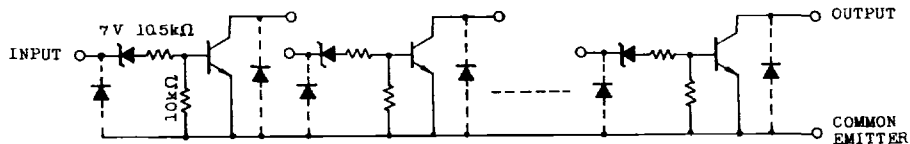


SCHEMATICS

TD62501F

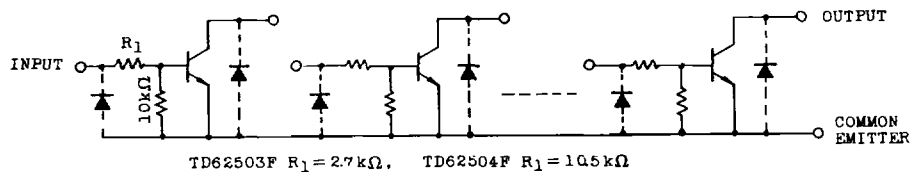


TD62502F

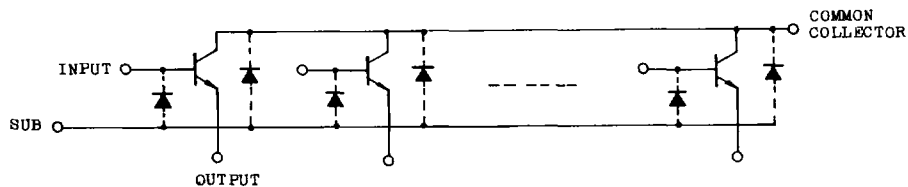


TD62503F

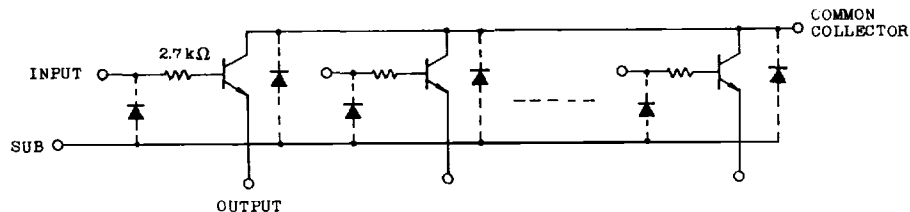
TD62504F



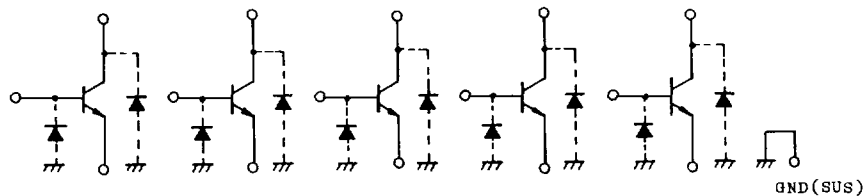
TD62505F



TD62506F



TD62507F



TD62501F ~ TD62507F

RECOMMENDED OPERATING CONDITIONS (Ta=-40~85°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Voltage		V _{CEO}		0	-	35	V
Collector-Base Voltage		V _{CBO}		0	-	50	V
Collector Current		I _C		0	-	150	mA
Input Voltage	TD62506F	V _{IN}		0	-	35	V
	TD62502F						
	TD62503F			0	-	25	
	TD62504F						
Input Current	TD62501F	I _{IN}		0	-	10	mA
	TD62505F						
	TD62507F						
Power Dissipation		P _D		-	-	0.325	W

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leak Current	I _{CEX}	1	V _{CE} =25V, V _{IN} =0	-	-	10	μA
Collector-Emitter Saturation Voltage	V _{CE(sat)}	2	I _{IN} =1mA, I _C =10mA	-	-	0.2	V
			I _{IN} =3mA, I _C =150mA *	-	-	0.8	
DC Forward Current Transfer Ratio	h _{FE}	2	V _{CE} =10V I _C =10mA	**	70	-	
				***	50	-	
Input Voltage (Output ON)	V _{IN(ON)}	3	I _{IN} =1mA I _C =10mA	TD62502F	13	17	V
				TD62503F	2.4	3.4	
				TD62504F	7.5	11.5	
Turn-ON Delay	t _{ON}	4	V _{OUT} =35V, R _L =175Ω C _L =15pF	-	50	-	ns
Turn-OFF Delay	t _{OFF}			-	200	-	

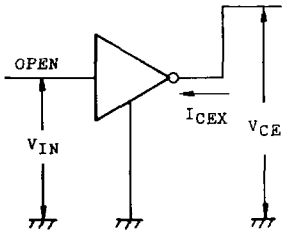
* EXCEPT TD62502F

** TD62501F, TD62505F, TD62506F, TD62507F

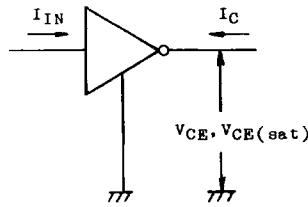
*** TD62502F, TD62503F, TD62504F

TEST CIRCUIT

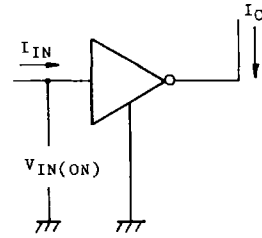
1. I_{CEX}



2. h_{FE} , $V_{CE(sat)}$

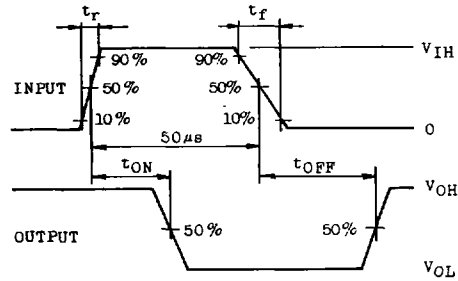
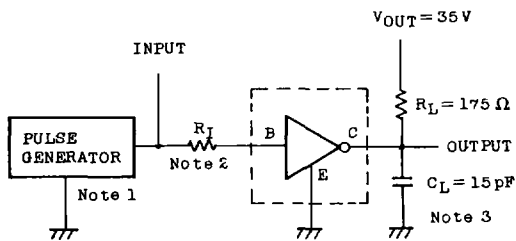


3. $V_{IN(ON)}$



$$h_{FE} = \frac{I_C}{I_{IN}}$$

4. t_{ON} , t_{OFF}



Notes: 1. Pulse Width 50μs

Duty Cycle 10%

Output Impedance 50Ω

$t_r \leq 5ns$, $t_f \leq 10ns$

3. C_L includes probe and jig capacitance

2. See below

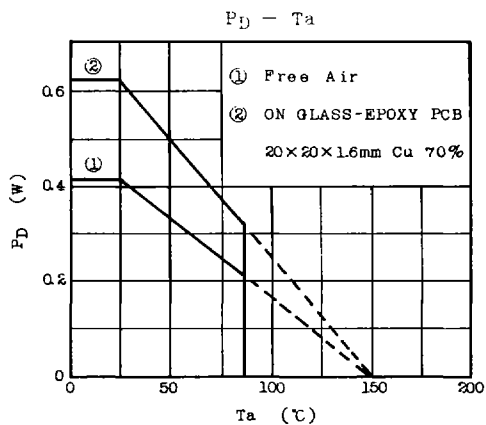
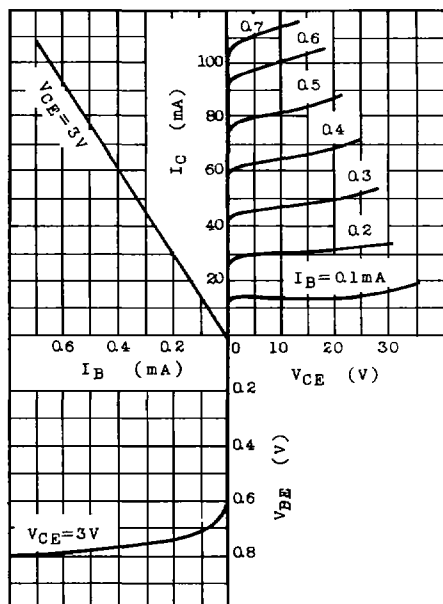
Input Conditions

TYPE NUMBER	R_I	V_{IH}
TD62501F	2.7kΩ	3V
TD62502F	0	15V
TD62503F	0	3V
TD62504F	0	10V
TD62505F	2.7kΩ	3V
TD62506F	0	3V
TD62507F	2.7kΩ	3V

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STATIC CHARACTERISTICS



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