

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT MULTI CHIP

TD62M3701F

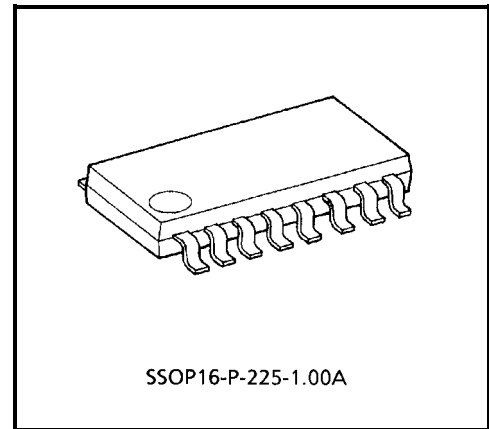
LOW SATURATION VOLTAGE DRIVER FOR MOTOR

TD62M3701F is Multi Chip IC incorporates 6 low saturation discrete transistors which equipped bias resistor and fly-wheel diode.

This IC is suitable for a battery use motor drive applications.

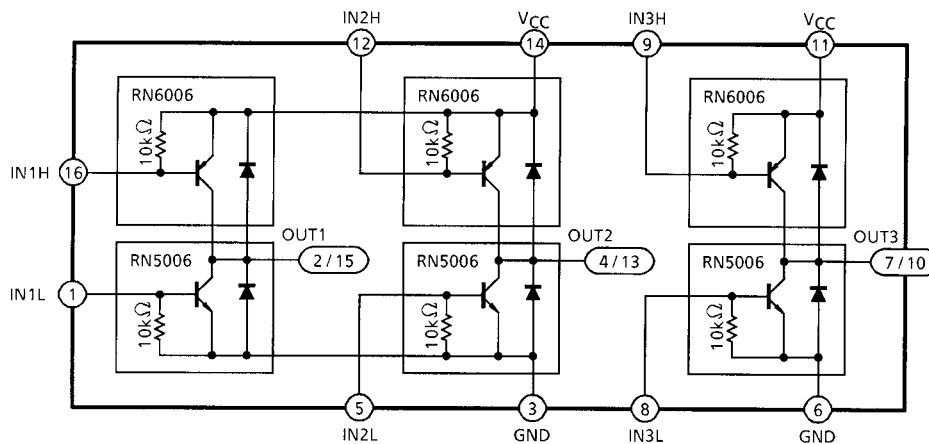
FEATURES

- Suitable for high efficiency motor drive circuit
- Built-in fly-wheel diode
- Built-in bias resistor : R = 10 kΩ (Typ.)
- SSOP16 (1 mm pitch) small package sealed
- Low saturation voltage:
 $V_{CE(sat)} = 0.29\text{ V (Typ.) at } I_O = 1\text{ A}$
 $V_{CE(sat)} = 0.53\text{ V (Typ.) at } I_O = 2\text{ A}$
 (Upper and lower side total)

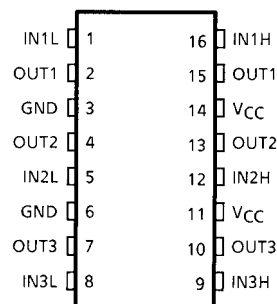


Weight: 0.14 g (Typ.)

BLOCK DIAGRAM



PIN CONNECTION (TOP VIEW)



MAXIMUM RATINGS (Ta = 25°C)

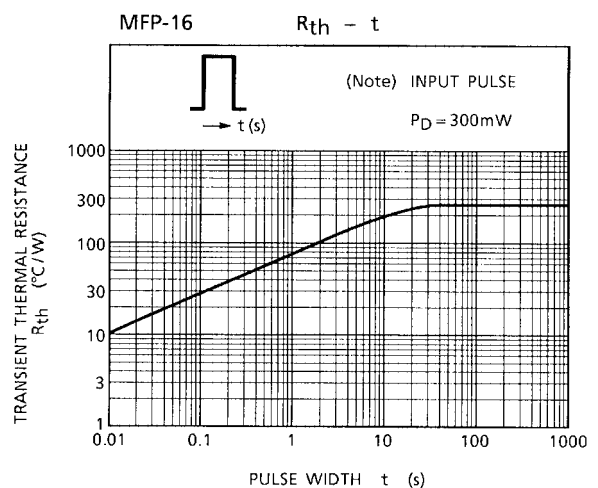
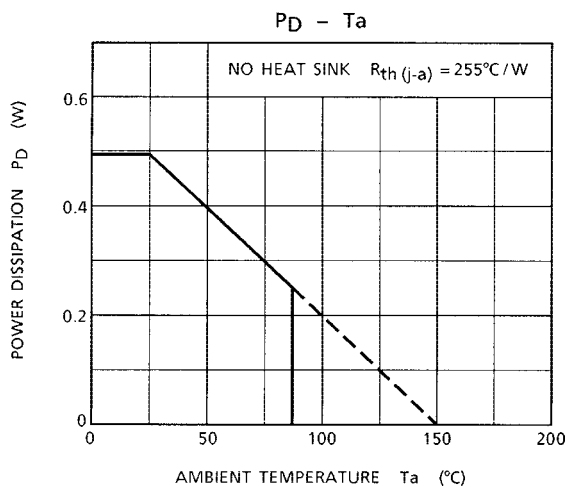
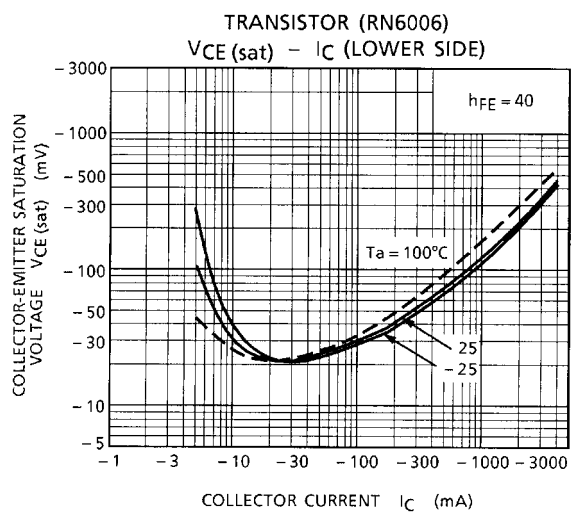
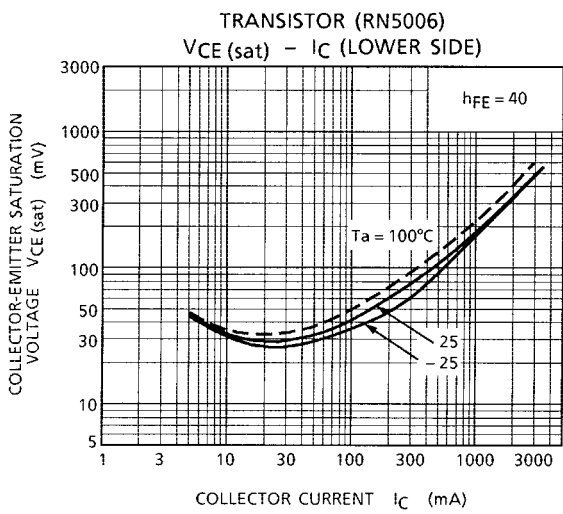
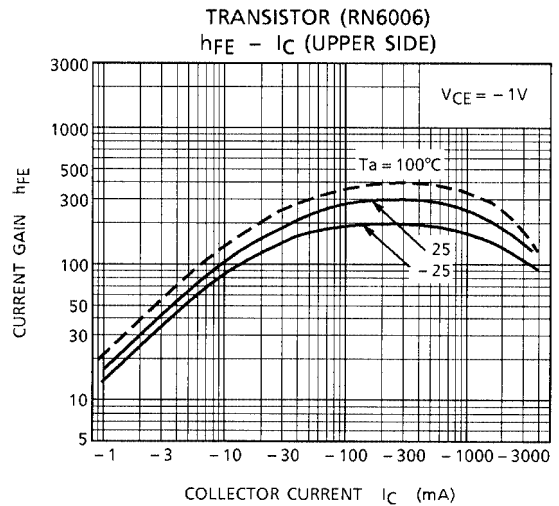
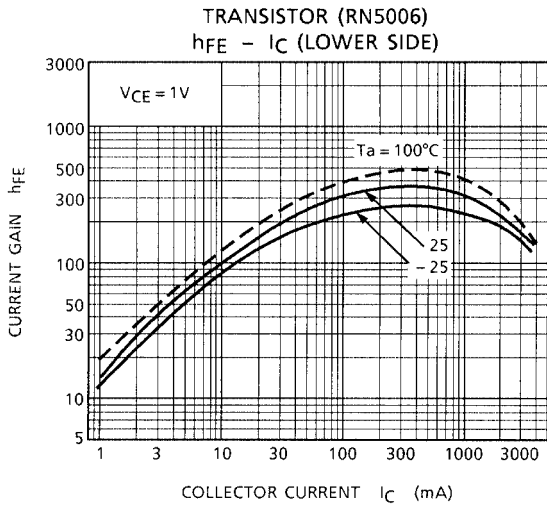
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V _{CC}	10	V
Breakdown Voltage	V _{CBO}	10	V
	V _{CEO}	10	
	V _{EBO}	6	
Output Current	I _O	2	A
	I _O (PEAK)	4 (Note 1)	
Base Current	I _B	±0.4	A
	I _B (PEAK)	±0.8 (Note 1)	
Diode Forward Current	I _F	2 (Note 2)	A
Power Dissipation	P _D	490	mW
Junction Temperature	T _j	150	°C
Operating Temperature	T _{opr}	-40~85	°C
Storage Temperature	T _{stg}	-55~150	°C

Note 1: T = 10 ms Max. and maximum duty is less than 30%.

Note 2: T = 10 ms single pulse

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN	TYP.	MAX	UNIT
Current Gain		h _{FE} (1)	—	V _{CE} = 1 V, I _C = 0.5 A	160	—	600	—
		h _{FE} (2)	—	V _{CE} = 1 V, I _C = 2.0 A	60	130	—	
Saturation Voltage	Upper Side	V _{CE} (sat)	—	I _C = -1 A, I _B = -25 mA	—	-0.16	-0.22	V
				I _C = -2 A, I _B = -50 mA	—	-0.28	-0.45	
	Lower Side			I _C = 1 A, I _B = 25 mA	—	0.13	0.22	
				I _C = 2 A, I _B = 50 mA	—	0.25	0.45	
	Summing Total			I _C = 1 A, I _B = 25 mA	—	0.29	0.42	
I _C = 2 A, I _B = 50 mA	—	0.53	0.85					
Transition Frequency		f _T	—	V _{CE} = 2 V, I _C = 0.5 A	—	150	—	MHz
Leakage Current	Upper Side	I _{OL}	—	V _{CC} = -10 V	—	0	-5	μA
	Lower Side			V _{CC} = 10 V	—	0	5	
Diode Forward Voltage	Upper Side	V _F	—	I _F = 300 mA	—	0.89	1.2	V
				I _F = 450 mA 10 ms pulse	—	1.60	—	
	Lower Side			I _F = 300 mA	—	0.89	1.2	
				I _F = 450 mA 10 ms pulse	—	1.60	—	
Base-Emitter Resistor		R _{BE}	—	—	7	10	13	kΩ
Base-Emitter Forward Voltage		V _{BE} (PNP)	—	V _{CE} = -1 V, I _C = -2 A	—	-0.84	-1.5	V
		V _{BE} (NPN)	—	V _{CE} = 1 V, I _C = 2 A	—	0.84	1.5	



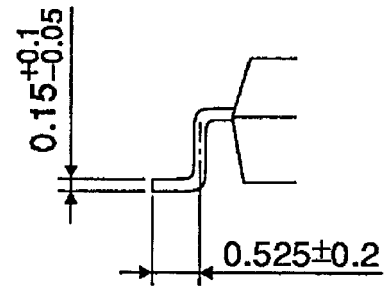
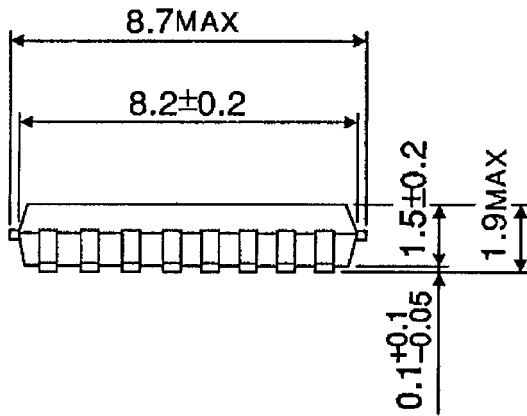
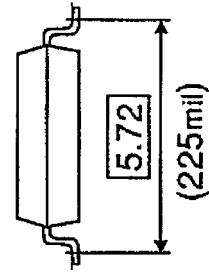
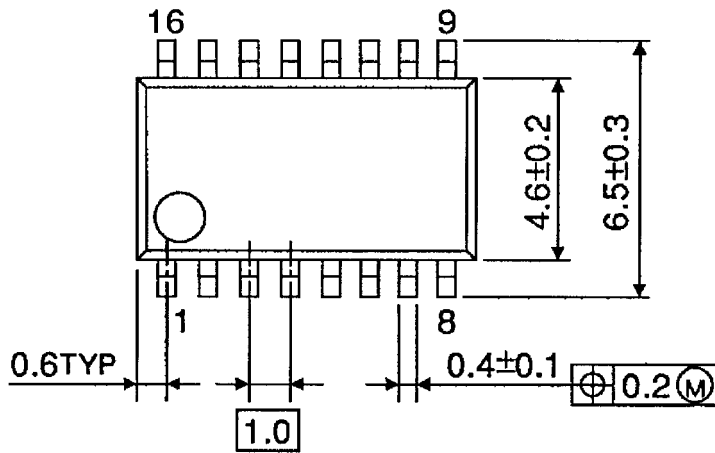
PRECAUTIONS for USING

This IC does not integrate protection circuits such as overcurrent and overvoltage protectors. Thus, if excess current or voltage is applied to the IC, the IC may be damaged. Please design the IC so that excess current or voltage will not be applied to the IC. Utmost care is necessary in the design of the output line, VCC and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.

PACKAGE DIMENSIONS

SSOP16-P-225-1.00A

Unit: mm



Weight: 0.14 g (Typ.)

RESTRICTIONS ON PRODUCT USE

000707EBA

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