

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT MULTI CHIP

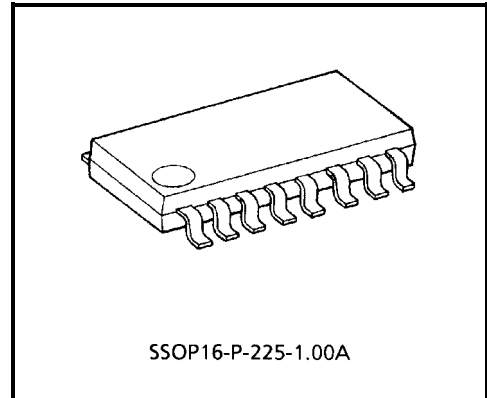
# TD62M3700F

## LOW SATURATION VOLTAGE DRIVER FOR MOTOR

TD62M3700F is low saturation, high current 3 phase full-wave type inverter IC designed especially for battery use motor drive applications.

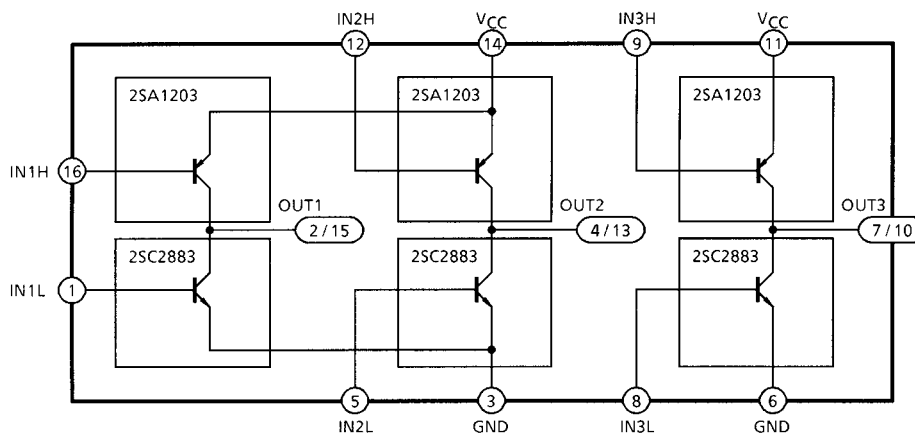
### FEATURES

- High current :  $I_O$  (AVE) = 1.5 A  
 $I_O$  (PEAK) = 3.0 A
- Sealed in 1 mm pitch 16pin surface mount package (SSOP16)

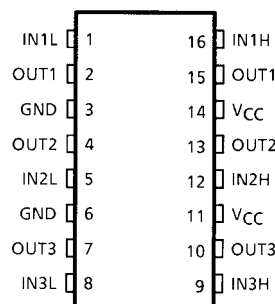


Weight: 0.14 g (Typ.)

### BLOCK DIAGRAM



### PIN CONNECTION (TOP VIEW)



## MAXIMUM RATINGS (Ta = 25°C)

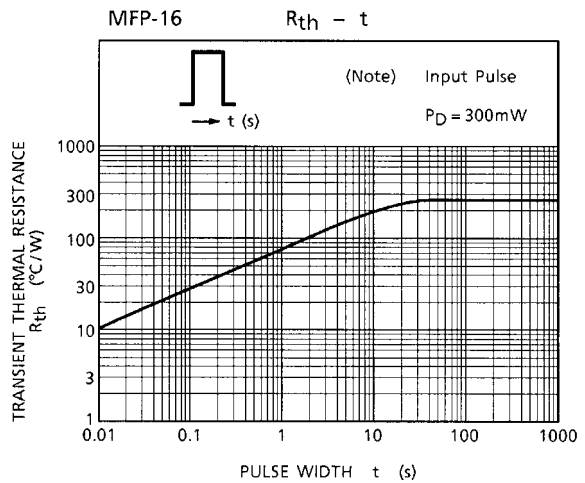
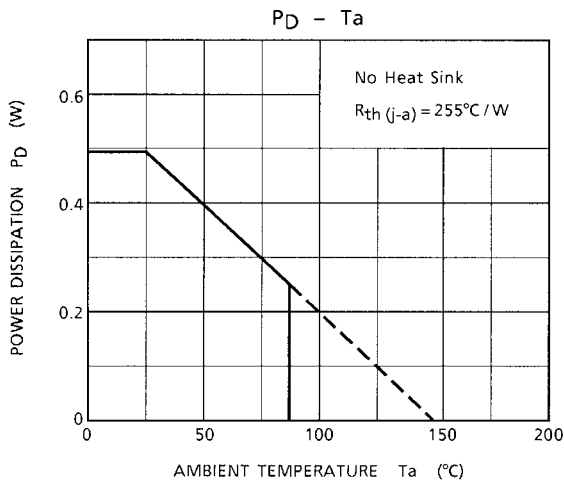
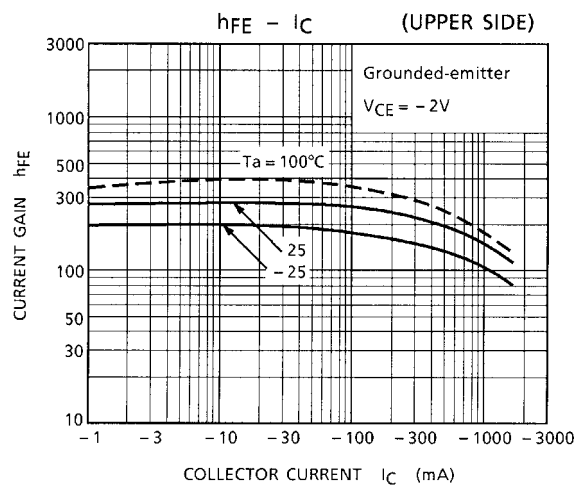
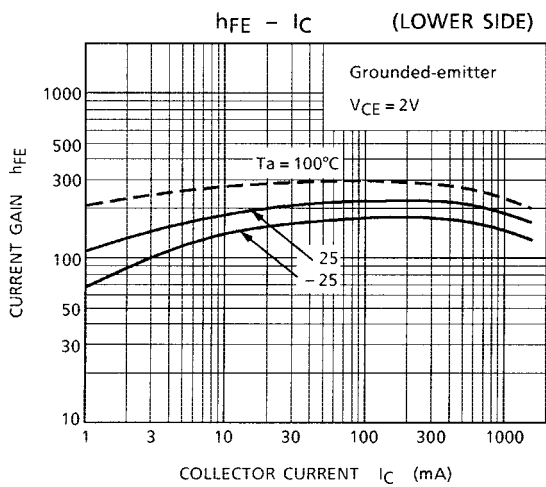
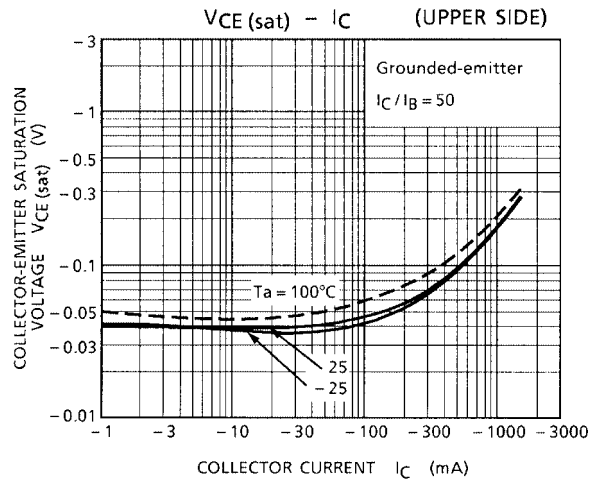
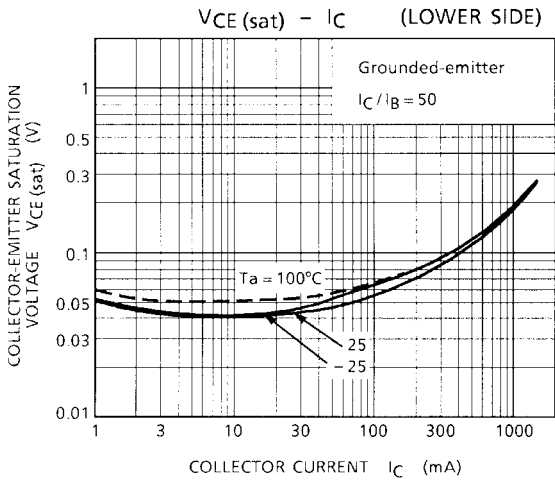
CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	V <sub>CC</sub>	30	V
Breakdown Voltage	V <sub>CB0</sub>	30	V
	V <sub>CEO</sub>	30	
	V <sub>EBO</sub>	5	
Output Current (Average)	I <sub>O</sub> (AVE)	1.5	A
Output Current (Peak)	I <sub>O</sub> (PEAK)	3.0 (Note 1)	A
Base Current	I <sub>B</sub>	±0.3	A
Power Dissipation	P <sub>D</sub>	490 (Note 2)	mW
Junction Temperature	T <sub>j</sub>	150	°C
Operating Temperature	T <sub>opr</sub>	-40~85	°C
Storage Temperature	T <sub>stg</sub>	-55~150	°C

Note 1: T = 10 ms single pulse

Note 2: Free Air

## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN	TYP.	MAX	UNIT
Current Gain		h <sub>FE</sub> (1)	—	V <sub>CE</sub> = -2 V, I <sub>C</sub> = -0.5 A	160	—	320	—
		h <sub>FE</sub> (2)	—	V <sub>CE</sub> = 0.4 V, I <sub>C</sub> = 0.2 A	160	—	600	
h <sub>FE</sub> Ratio		h <sub>FE</sub> (1) / h <sub>FE</sub> (2)	—	V <sub>CE</sub> = 0.4 V, I <sub>C</sub> = 30 mA / V <sub>CE</sub> = 0.4 V, I <sub>C</sub> = 0.2 A	0.75	—	1.25	—
Saturation Voltage	Upper Side	V <sub>CE</sub> (sat)	—	I <sub>C</sub> = -0.5 A, I <sub>B</sub> = -5.0 mA	—	-0.35	-0.50	V
				I <sub>C</sub> = -1.5 A, I <sub>B</sub> = -30 mA	—	—	-2.0	
	Lower Side			I <sub>C</sub> = 0.5 A, I <sub>B</sub> = 5.0 mA	—	0.2	0.35	
				I <sub>C</sub> = 1.5 A, I <sub>B</sub> = 30 mA	—	—	2.0	
	Summing Total			I <sub>C</sub> = 0.5 A, I <sub>B</sub> = 5.0 mA	—	0.55	0.85	
I <sub>C</sub> = 1.5 A, I <sub>B</sub> = 30 mA	—	—	4.0					
Transition Frequency		f <sub>T</sub>	—	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 0.5 A	—	120	—	MHz
Leakage Current	Upper Side	I <sub>OL</sub>	—	V <sub>CC</sub> = -30 V	—	0	-5	μA
	Lower Side			V <sub>CC</sub> = 30 V	—	0	5	
Base-Emitter Forward Voltage	Upper Side	V <sub>BE</sub> (PNP)	—	V <sub>CE</sub> = -1 V, I <sub>C</sub> = -2 A	—	-0.84	-1.5	V
	Lower Side	V <sub>BE</sub> (NPN)	—	V <sub>CE</sub> = 1 V, I <sub>C</sub> = 2 A	—	0.84	1.5	



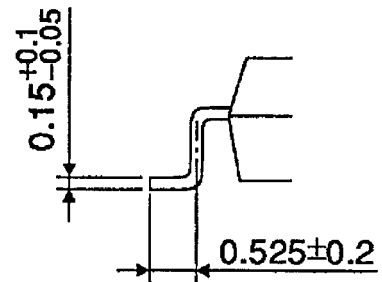
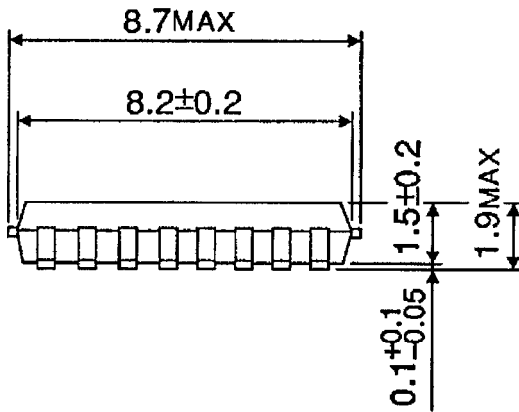
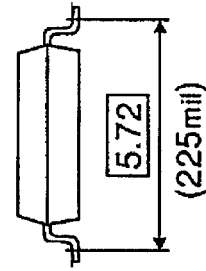
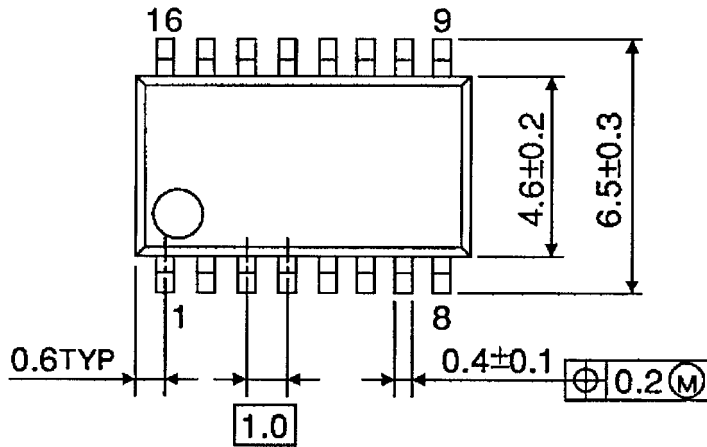
**PRECAUTIONS for USING**

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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