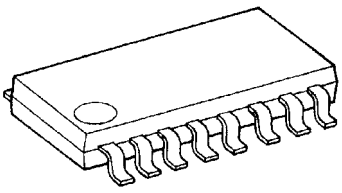
TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT MULTI CHIP

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.



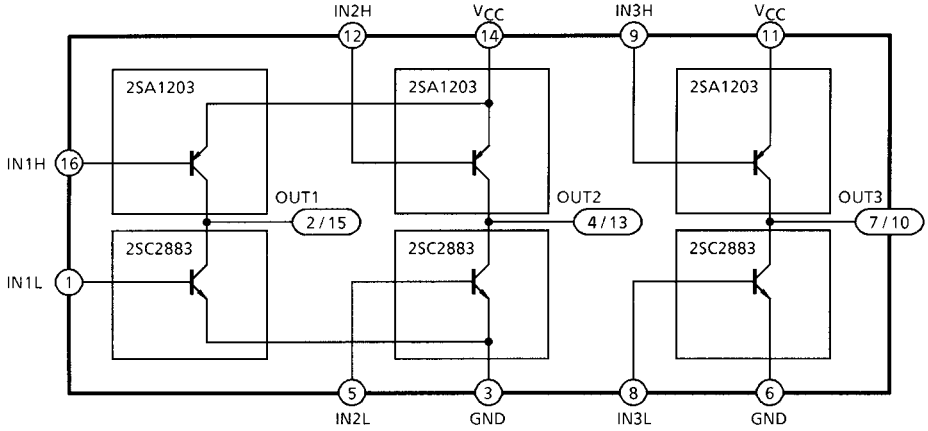
SSOP16-P-225-1.00A

Weight: 0.14 g (Typ.)

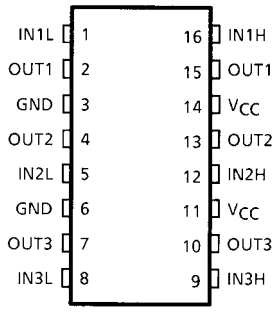
FEATURES

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

BLOCK DIAGRAM



PIN CONNECTION (TOP VIEW)



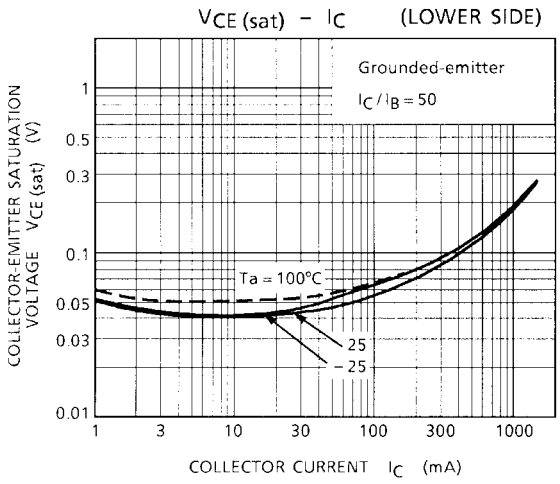
MAXIMUM RATINGS (Ta = 25°C)

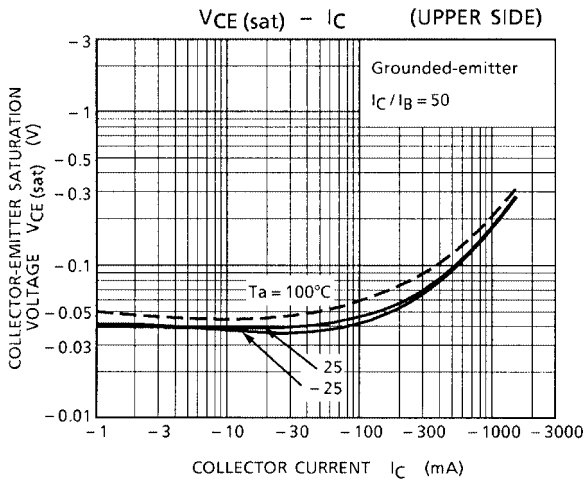
CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	V_{CC}	30	V
Breakdown Voltage	V_{CBO}	30	V
	V_{CEO}	30	
	V_{EBO}	5	
Output Current (Average)	$I_{O\ (AVE)}$	1.5	A
Output Current (Peak)	$I_{O\ (PEAK)}$	3.0 (Note 1)	A
Base Current	I_B	±0.3	A
Power Dissipation	P_D	490 (Note 2)	mW
Junction Temperature	T_j	150	°C
Operating Temperature	T_{opr}	−40~85	°C
Storage Temperature	T_{stg}	−55~150	°C

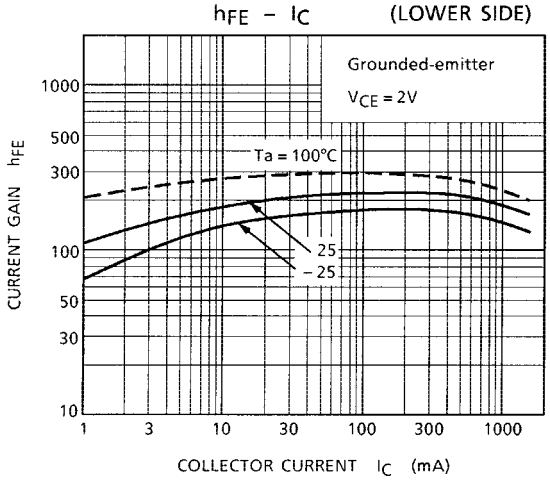
Note 1: T = 10 ms single pulse
Note 2: Free Air

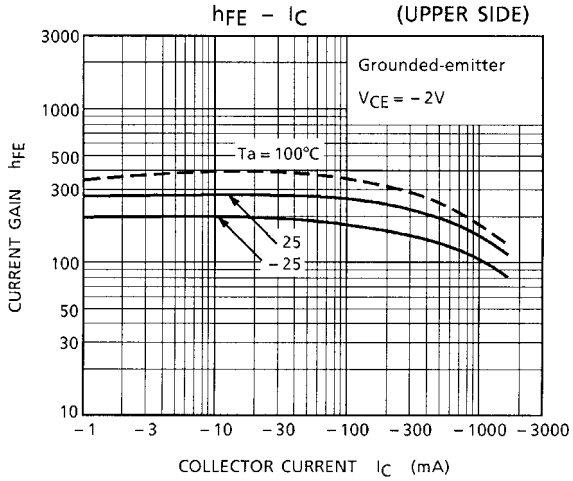
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

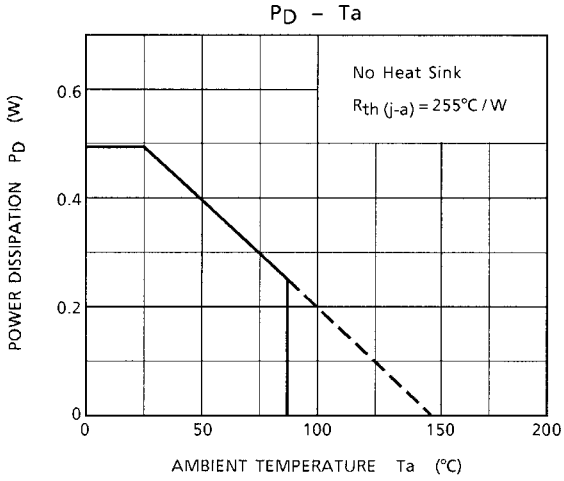
CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN	TYP.	MAX	UNIT
Current Gain		$h_{FE\ (1)}$	—	V_{CE} = −2 V, I_C = −0.5 A	160	—	320	—
		$h_{FE\ (2)}$	—	V_{CE} = 0.4 V, I_C = 0.2 A	160	—	600	
h_{FE} Ratio		$h_{FE\ (1)}$ / $h_{FE\ (2)}$	—	V_{CE} = 0.4 V, I_C = 30 mA / V_{CE} = 0.4 V, I_C = 0.2 A	0.75	—	1.25	—
Saturation Voltage	Upper Side	$V_{CE\ (sat)}$	—	I_C = −0.5 A, I_B = −5.0 mA	—	−0.35	−0.50	V
				I_C = −1.5 A, I_B = −30 mA	—	—	−2.0	
	Lower Side			I_C = 0.5 A, I_B = 5.0 mA	—	0.2	0.35	
				I_C = 1.5 A, I_B = 30 mA	—	—	2.0	
	Summing Total			I_C = 0.5 A, I_B = 5.0 mA	—	0.55	0.85	
				I_C = 1.5 A, I_B = 30 mA	—	—	4.0	
Transition Frequency		f_T	—	V_{CE} = 2 V, I_C = 0.5 A	—	120	—	MHz
Leakage Current	Upper Side	I_{OL}	—	V_{CC} = −30 V	—	0	−5	μA
	Lower Side			V_{CC} = 30 V	—	0	5	
Base−Emitter Forward Voltage	Upper Side	$V_{BE\ (PNP)}$	—	V_{CE} = −1 V, I_C = −2 A	—	−0.84	−1.5	V
	Lower Side	$V_{BE\ (NPN)}$	—	V_{CE} = 1 V, I_C = 2 A	—	0.84	1.5	

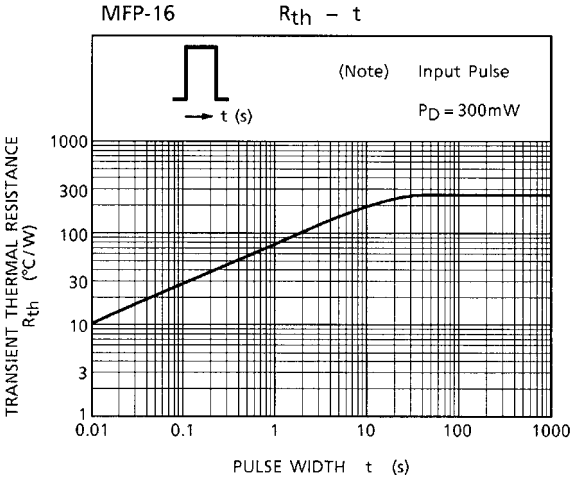










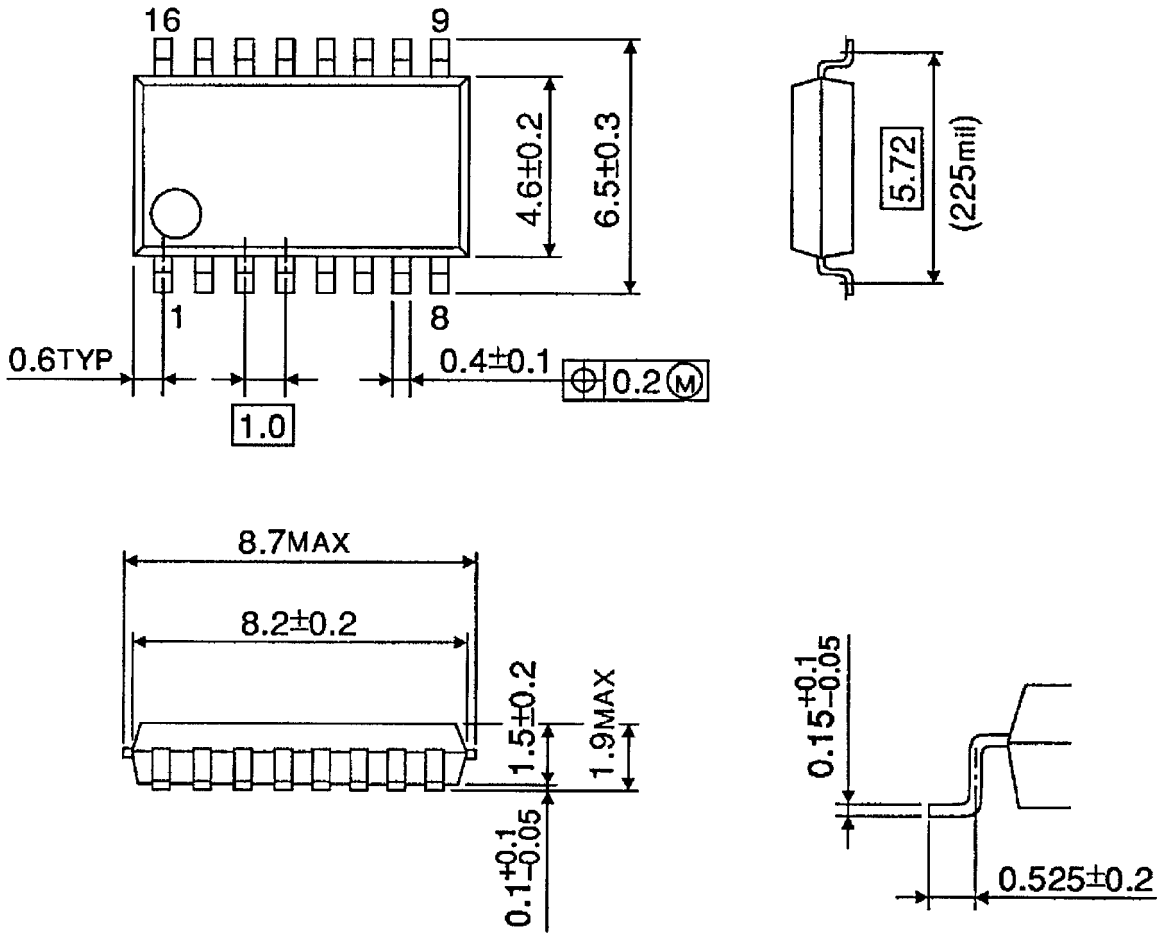


PRECAUTIONS for USING

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, V_{CC} 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.)

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000707EBA

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