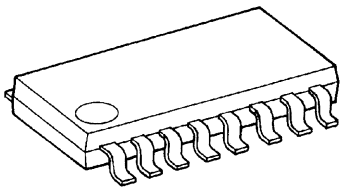
TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT MULTI CHIP

TD62M3702F

LOW SATURATION VOLTAGE DRIVER FOR MOTOR

TD62M3702F is Multi Chip IC incorporates 6 low saturation discrete transistors.
This IC is suitable for a battery use motor drive applications.



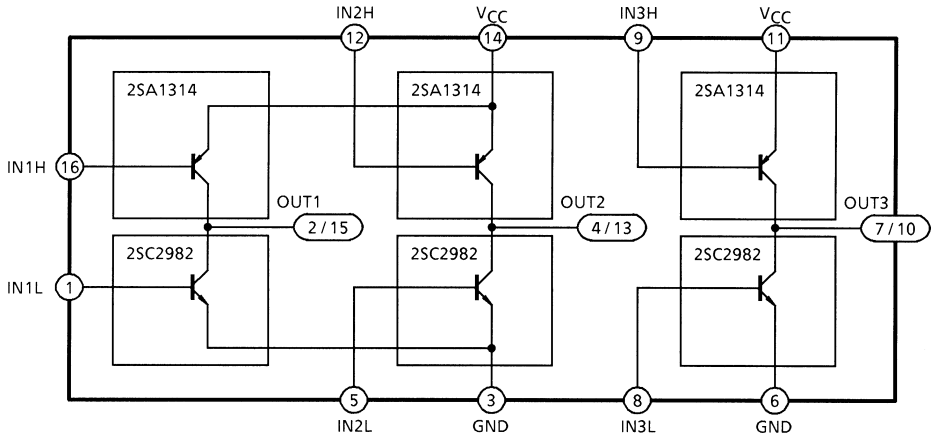
SSOP16-P-225-1.00A

Weight: 0.14 g (Typ.)

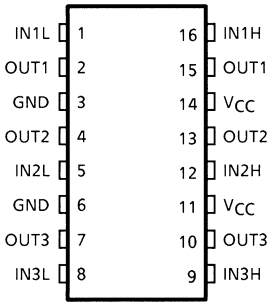
FEATURES

- Suitable for High Efficiency Motor drive circuit
- External Input Resistor
- SSOP16 (1 mm pitch) small package sealed
- Low Saturation Voltage
  : $V_{CE\ (sat)}$ = 0.20 V (Typ.) at I_O = 1 A
  $V_{CE\ (sat)}$ = 0.40 V (Typ.) at I_O = 2 A
  (Upper and Lower side total)

BLOCK DIAGRAM



PIN CONNECTION (TOP VIEW)



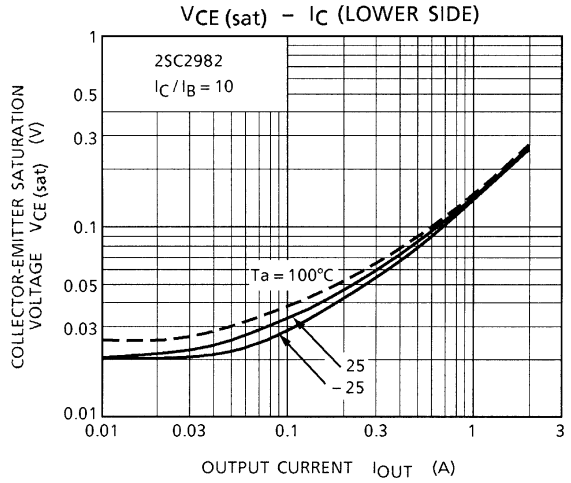
MAXIMUM RATINGS (Ta = 25°C)

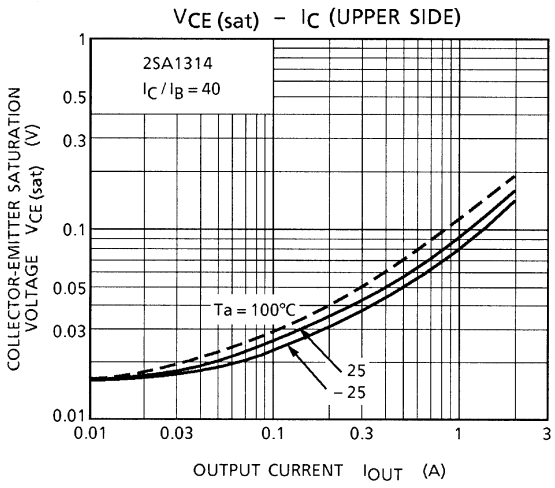
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	15	V
Breakdown Voltage	V_{CBO}	15	V
	V_{CEO}	15	
	V_{BEO}	6	
Output Current	$I_{O\ (AVE)}$	2	A
	$I_{O\ (PEAK)}$	4 (Note 1)	
Base Current	I_B	0.4	A
Power Dissipation	P_D	700 (Note 2)	mW
Junction Temperature	T_j	150	°C
Operating Temperature	T_{opr}	−40~85	°C
Storage Temperature	T_{stg}	−55~150	°C

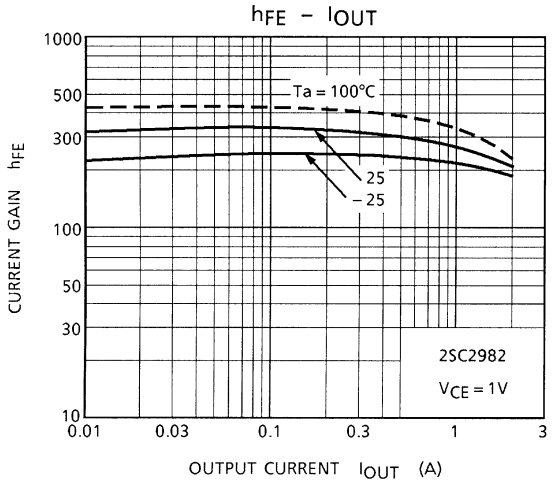
Note 1: T = 10 ms single pulse
Note 2: Free Air

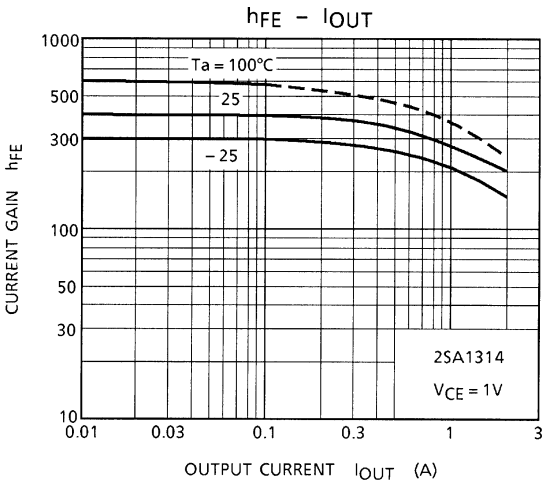
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL		TEST CIR-CUIT	TEST CONDITION	MIN	TYP.	MAX	UNIT
Current Gain	$h_{FE\ (1)}$		—	V_{CE} = 0.4 V, I_C = 30 mA	160	—	600	—
	$h_{FE\ (2)}$		—	V_{CE} = 0.4 V, I_C = 0.2 A	160	—	600	
Current Gain 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	$V_{CE\ (sat)}$ (Upper side)		—	I_C = −1 A, I_B = −25 mA	—	−0.1	−0.25	V
				I_C = −2 A, I_B = −50 mA	—	−0.2	−0.50	
	$V_{CE\ (sat)}$ (Lower side)		—	I_C = 1 A, I_B = 25 mA	—	0.1	0.30	
				I_C = 2 A, I_B = 50 mA	—	0.2	0.50	
	$V_{CE\ (sat)}$ (Summing Total)		—	I_C = 1 A, I_B = 25 mA	—	0.2	0.55	
				I_C = 2 A, I_B = 50 mA	—	0.4	1.0	
Transition Frequency	f_T		—	V_{CE} = 2 V, I_C = 0.5 A	—	140	—	MHz
Leakage Current	I_{OL}	(Upper side)	—	V_{CC} = −15 V	—	0	−10	μA
		(Lower side)		V_{CC} = 15 V	—	0	10	
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	







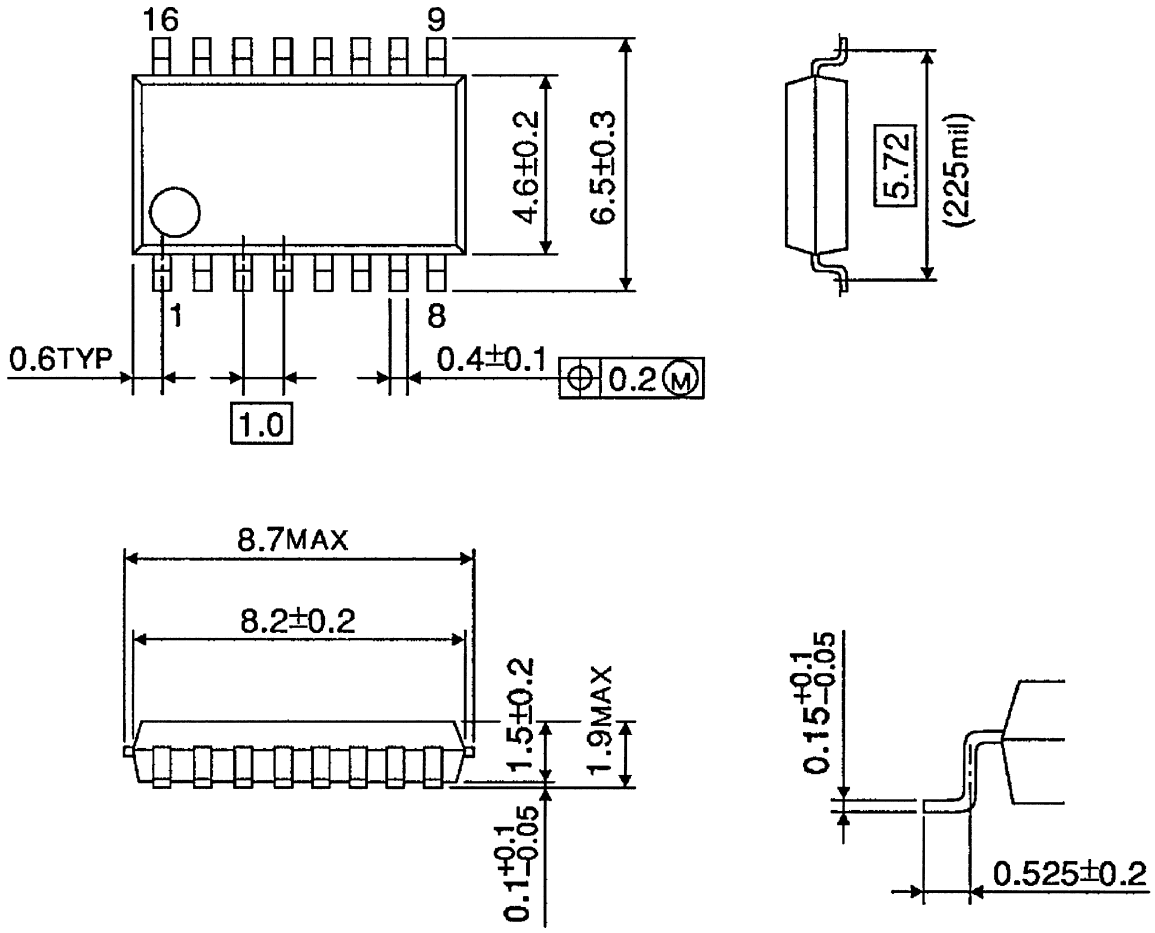


PRECAUTIONS for USING

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, 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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