TOSHIBA Transistor Silicon PNP Triple Diffused Type (Darlington Power)

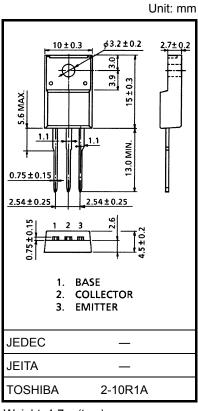
2SB1020A

High-Power Switching Applications
Hammer Drive, Pulse Motor Drive Applications

- High DC current gain: $h_{FE} = 2000$ (min) ($V_{CE} = -3$ V, $I_{C} = -3$ A)
- Low saturation voltage: $V_{CE (sat)} = -1.5 \text{ V (max) (IC} = -3 \text{ A)}$
- Complementary to 2SD1415A

Absolute Maximum Ratings (Tc = 25°C)

Characteristics		Symbol	Rating	Unit	
Collector-base voltage		V_{CBO}	-100	V	
Collector-emitter voltage		V _{CEO}	-100	٧	
Emitter-base voltage		V _{EBO}	-5	V	
Collector current	DC	IC	-7	А	
	Pulse	I _{CP}	-10		
Base current		Ι _Β	-0.7	Α	
Collector power dissipation	Ta = 25°C	P _C	2.0	W	
	Tc = 25°C	FC	30		
Junction temperature		Тј	150	°C	
Storage temperature range		T _{stg}	-55 to 150	°C	



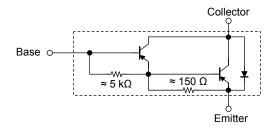
Weight: 1.7 g (typ.)

Note: Using continuously under heavy loads (e.g. the application of high

temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

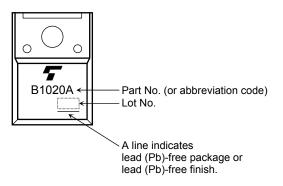
Equivalent Circuit

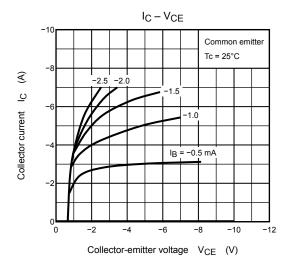


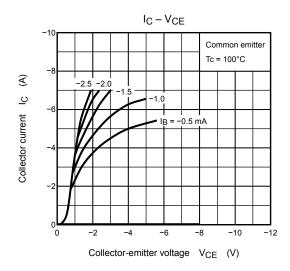
Electrical Characteristics (Tc = 25°C)

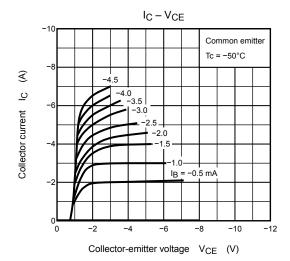
Characteristics		Symbol	Test Condition	Min	Тур.	Max	Unit	
Collector cut-off current		I _{CBO}	V _{CB} = -100 V, I _E = 0	_	_	-100	μΑ	
Emitter cut-off current		I _{EBO}	V _{EB} = -5 V, I _C = 0	_	_	-4.0	mA	
Collector-emitter breakdown voltage		V (BR) CEO	I _C = -50 mA, I _B = 0	-100	_	_	V	
DC current gain		h _{FE (1)}	V _{CE} = -3 V, I _C = -3 A	2000	_	15000		
		h _{FE (2)}	V _{CE} = -3 V, I _C = -7 A	1000	_	_		
Collector-emitter saturation voltage		V _{CE} (sat) (1)	I _C = -3 A, I _B = -6 mA	_	-0.95	-1.5	V	
		V _{CE} (sat) (2)	I _C = -7 A, I _B = -14 mA	_	-1.3	-2.0		
Base-emitter saturation voltage		V _{BE (sat)}	I _C = -3 A, I _B = -6 mA	_	-1.55	-2.5	V	
Switching time	Turn-on time	t _{on}	Output $ B $	_	0.8	_	μs	
	Storage time	t _{stg}		_	2.0	_		
	Fall time	t _f		_	2.5	_		

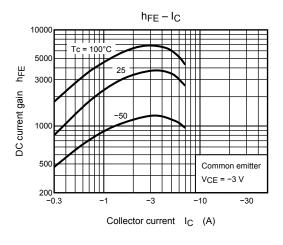
Marking

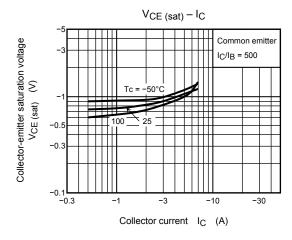


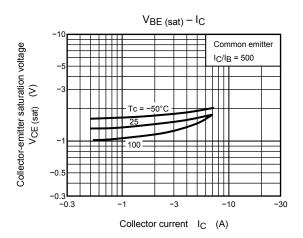


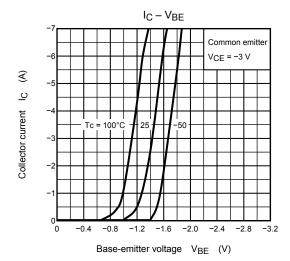


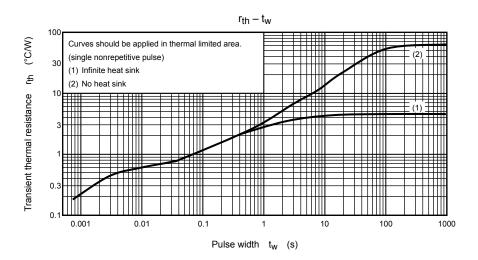


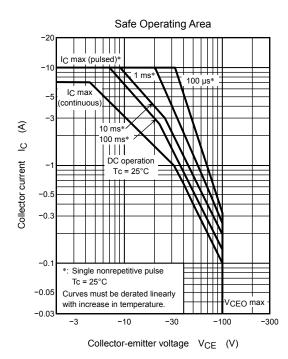












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