Bipolar Transistor (-)100V, (-)4A, Low VCE(sat), (PNP)NPN Single



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Features

- Low Collector to Emitter Saturation Voltage
- Small and Slim Package Facilitating Compactness of Sets
- High fT
- Good Linearity of hFE
- Fast Switching Time

Typical Applications

- Suitable for Relay Drivers
- High Speed Inverters
- Converters
- Other General High Current Switching Applications

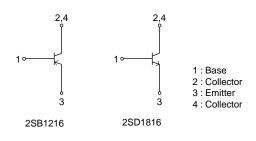
SPECIFICATIONS (): 2SB1216

ABSOLUTE MAXIMUM RATING at Ta = 25°C (Note 1)

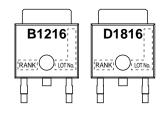
Parameter		Symbol	Value	Unit
Collector to Base Voltage		VCBO	(-) 120	V
Collector to Emitter Voltage		VCEO	(-) 100	V
Emitter to Base Voltage		VEBO	(-) 6	V
Collector Current		IC	(-) 4	Α
Collector Current (Pulse)		ICP	(-) 8	Α
Collector Dissipation	1 W			
Collector Dissipation	Tc=25°C	PC	20	W
Junction Temperature		Tj	150	°C
Storage Temperature		Tstg	-55 to +150	°C

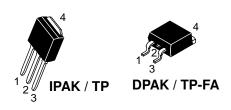
Note 1: Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ELECTRICAL CONNECTION



MARKING





ORDERING INFORMATION

See detailed ordering and shipping information on page 7 of this data sheet.

ELECTRICAL CHARACTERISTICS at Ta = 25°C (Note 2)

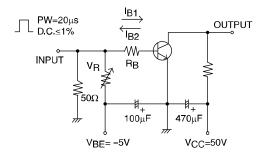
Parameter	C. mah al	0	Value			1.1
	Symbol	Conditions	min	typ	max	Unit
Collector Cutoff Current	ICBO	V _{CB} =(-)100V, I _E =0A			(-)1	μΑ
Emitter Cutoff Current	IEBO	V _{EB} =(-)4V, I _C =0A			(-)1	μΑ
DC Commant Cain	hFE1	V _{CE} =(-)5V, I _C =(-)0.5A	140*		400*	
DC Current Gain	hFE2	V _{CE} =(-)5V,I _C =(-)3A	40			
Gain-Bandwidth Product	fŢ	V _{CE} =(-)10V, I _C =(-)0.5A		(130) 180		MHz
Output Capacitance	Cob	V _{CB} =(-)10V, f=1MHz		(65) 40		pF
Collector to Emitter Saturation Voltage	V _{CE} (sat)	I _C =(-)2A, I _B =(-)0.2A		(–200) 150	(-500) 400	mV
Base to Emitter Saturation Voltage	V _{BE} (sat)	IC=(-)2A, IB=(-)0.2A		(-) 0.9	(-) 1.2	V
Collector to Base Breakdown Voltage	V(BR)CBO	I _C =(-)10μΑ, I _E =0Α	(–)120			٧
Collector to Emitter Breakdown Voltage	V(BR)CEO	I _C =(−)1mA, R _{BE} =∞	(–)100			٧
Emitter to Base Breakdown Voltage	V(BR)EBO	IE=(-)10μΑ, IC=0A	(-) 6			V
Turn-On Time	ton			100		ns
Storage Time	tstg	See specified Test Circuit		(800) 900		ns
Fall Time	tf	- Circuit		50		ns

Note 2 : Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

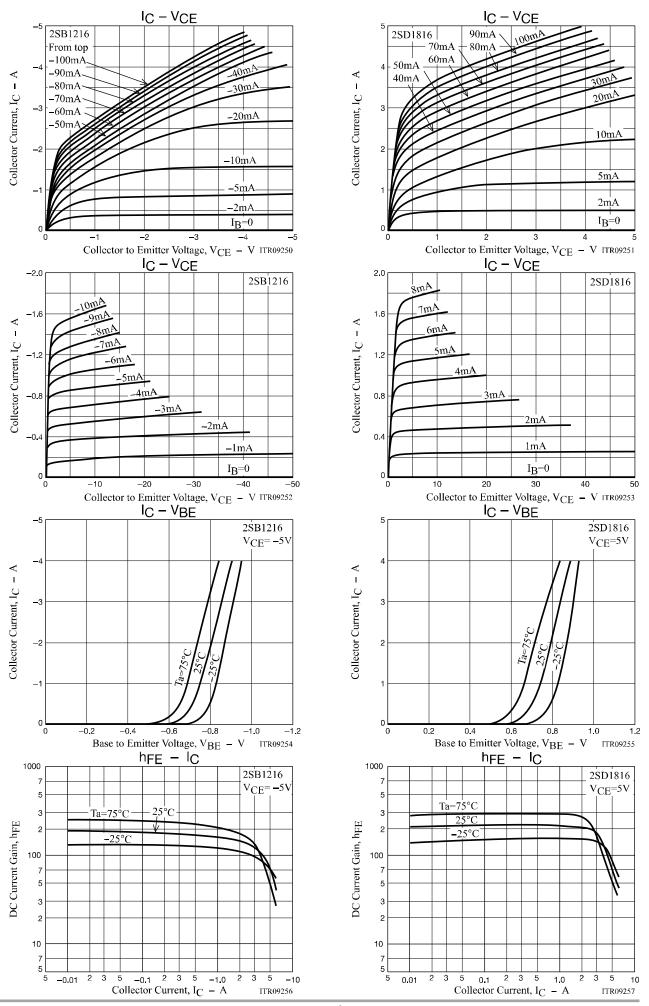
*: The 2SB1216/2SD1816 are classified by 0.5A hFE as follows:

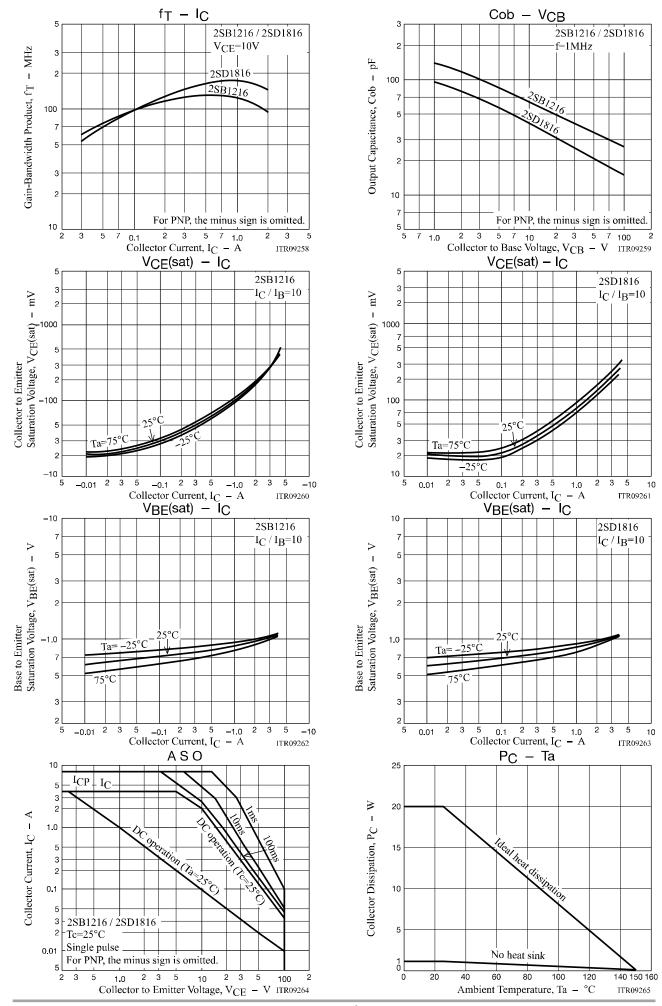
Rank	S	Т
hFE	140 to 280	200 to 400

Fig.1 Switching Time Test Circuit



 $I_{C}=10I_{B1}=-10I_{B2}=2A$ For PNP, the polarity is reversed.

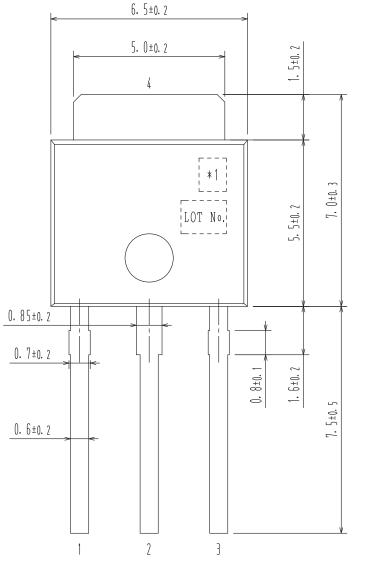


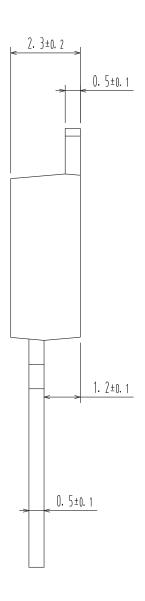


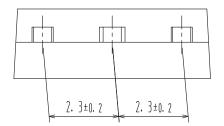
PACKAGE DIMENSIONS

unit: mm

IPAK / TP CASE 369AJ ISSUE O







- 1 : Base
- 2 : Collector
- 3 : Emitter
- 4 : Collector

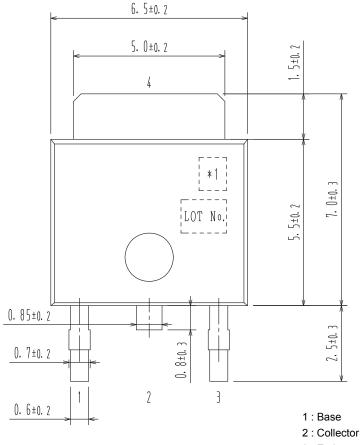
*1:Lot indication

PACKAGE DIMENSIONS

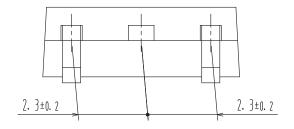
unit: mm

DPAK / TP-FA

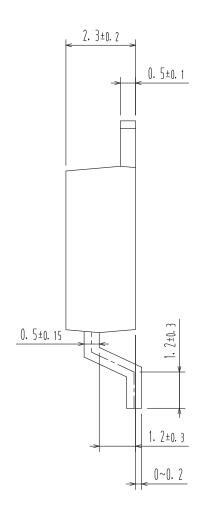
CASE 369AH ISSUE O



- 3 : Emitter
- 4 : Collector

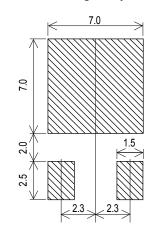


Pin 2 is idle pin with electrical designation only carried.



*1:Lot indication

Recommended Soldering Footprint



ORDERING INFORMATION

Device	Marking	Package	Shipping (Qty / Packing)	
2SB1216S-E	B1216			
2SB1216T-E	B1216	IPAK / TP		
2SD1816S-E	D1816	(Pb-Free)		
2SD1816T-E	D1816			
2SB1216S-H	B1216		500/ bag	
2SB1216T-H	B1216	IPAK / TP		
2SD1816S-H	D1816	(Pb-Free / Halogen Free)		
2SD1816T-H	D1816			
2SB1216S-TL-E	B1216			
2SB1216T-TL-E	B1216	DPAK / TP-FA		
2SD1816S-TL-E	D1816	(Pb-Free)	700/ Tara 9 Davi	
2SD1816T-TL-E	D1816			
2SB1216S-TL-H	B1216		700/ Tape & Reel	
2SB1216T-TL-H	B1216	DPAK / TP-FA		
2SD1816S-TL-H	D1816	(Pb-Free / Halogen Free)		
2SD1816T-TL-H	D1816			

[†] For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D. http://www.onsemi.com/pub_link/Collateral/BRD8011-D.PDF

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