

DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
1885	A	RELEASED	EO	02/03/06	HO	2/6/06	JWM	2/6/06

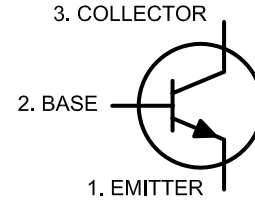
Description: HIGH-SPEED SATURATED SWITCH. The 2N2369A is a silicon planar epitaxial NPN in Jedec TO-18, metal case. It is Designed specifically for high-speed saturated applications at current levels from 100uA to 100mA

Features:

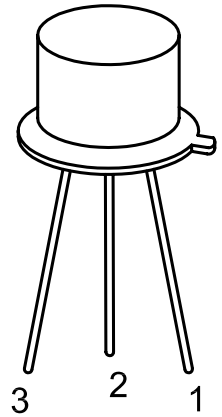
- Low Collector Saturation Voltage: 1V (Max)
- High Current Gain-Bandwidth Product: $f_T = 300\text{MHz}$ (Min) @ $I_C = 20\text{mA}$

Absolute Maximum Ratings:

- Collector-Base Voltage, $V_{CBO} = 40\text{V}$
- Collector-Emitter Voltage, $V_{CEO} = 15\text{V}$
- Emitter-Base Voltage, $V_{EBO} = 4.5\text{V}$
- Continuous Collector Current, $I_C = 200\text{mA}$
- Total Device Dissipation ($T_A = +25^\circ\text{C}$), $P_D = 360\text{mW}$
Derate above $25^\circ\text{C} = >2.28\text{mW}/^\circ\text{C}$
- Total Device Dissipation ($T_C = +25^\circ\text{C}$), $P_D = 1.2\text{W}$
Derate above $25^\circ\text{C} = 6.85\text{mW}/^\circ\text{C}$
- Operating Junction Temperature Range, $T_J = -65^\circ\text{C}$ to $+200^\circ\text{C}$
- Storage Temperature Range, $T_{stg} = -65^\circ\text{C}$ to $+200^\circ\text{C}$


NPN


1. EMITTER
2. BASE
3. COLLECTOR


Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Max	Unit
OFF Characteristics					
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}$, $I_B = 0$, (Note 1)	15	-	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}$, $I_E = 0$	40	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_C = 10\mu\text{A}$, $I_C = 0$	4.5	-	V
Collector Cut-Off Current	I_{CEX}	$V_{CE} = 20\text{V}$, $V_{EB(off)} = 3\text{V}$	-	200	nA
	I_{CBO}	$V_{CB} = 20\text{V}$, $I_E = 0$, $T_A = +150^\circ\text{C}$	-	30	μA

ON Characteristics (Note 1)

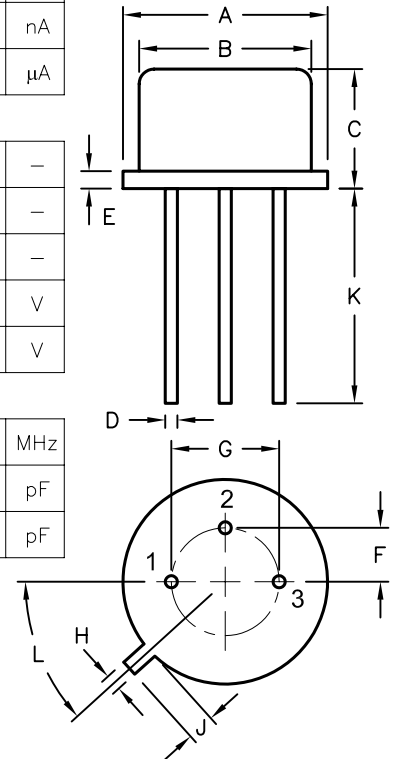
DC Current Gain	h_{FE}	$V_{CE} = .4\text{V}$, $I_C = 30\text{mA}$	30	-	-
		$V_{CE} = 1\text{V}$, $I_C = 10\text{mA}$	-	120	-
		$V_{CE} = 1\text{V}$, $I_C = 100\text{mA}$	20	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}$, $I_B = 1\text{mA}$	-	0.2	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}$, $I_B = 1\text{mA}$	0.7	0.85	V

Small-Signal Characteristics

Current Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}$, $I_C = 10\text{mA}$, $f = 100\text{MHz}$	500	-	MHz
Output Capacitance	C_{obo}	$V_{CB} = 5\text{V}$, $I_E = 0$, $f = 1\text{MHz}$	-	4	pF
Input Capacitance	C_{ibo}	$V_{BE} = 1\text{V}$, $I_C = 0$, $f = 1\text{MHz}$	-	4	pF

Note 1. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

Dimensions	A	B	C	D	E	F	G	H	J	K	L
Min.	5.24	4.52	4.31	0.40	-	-	-	0.91	0.71	12.70	45°
Max.	5.84	4.97	5.33	0.53	0.76	1.27	2.97	1.17	1.21	-	



SPC-F004.DWG

TOLERANCES: UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.	DRAWN BY:	DATE:	DRAWING TITLE:			
	EKLAS ODISH	02/03/06	High-Speed Saturated Switch Transistor, Bipolar, Metal, TO-18, NPN			
	CHECKED BY:	DATE:	SIZE	DWG. NO.	ELECTRONIC FILE	REV
	HISHAM ODISH	2/6/06	A	2N2369A	35C0691.DWG	A
	APPROVED BY:	DATE:	SCALE: NTS		U.O.M.: Millimeters	SHEET: 1 OF 1
	JEFF MCVICKER	2/6/06				

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