NEW

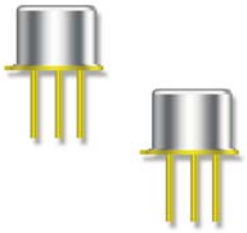
NPN Meduim Power Silicon Transistor

2N3418, 2N3419, 2N3420 & 2N3421
2N3418S, 2N3419S, 2N3420S & 2N3421S

AEROFLEX
A passion for performance.

Features

- Available in commercial, JAN, JANTX, JANTXV, JANS and JANSR 100K rads (Si) per MIL-PRF-19500/393
- TO-5, TO-39 (TO-205AD) Package



Maximum Ratings

Ratings	Symbol	2N3418, S 2N3420, S	2N3419, S 2N3421, S	Units
Collector - Emitter Voltage	V_{CEO}	60	80	Vdc
Collector - Base Voltage	V_{CBO}	85	125	Vdc
Emitter - Base Voltage	V_{EBO}	8.0		Vdc
Collector Current $T_P \leq 1.0$ ms, duty cycle $\leq 50\%$	I_C	3.0 5.0		Adc
Total Power Dissipation @ $T_A = +25$ °C @ $T_C = +100$ °C	P_T	1.0 5.0		W W
Operating & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200		°C

Electrical Characteristics

OFF Characteristics		Symbol	Mimimum	Maximum	Units
Collector - Emitter Breakdown Voltage $I_C = 50$ mAdc	2N3418, S, 2N3420, S 2N3419, S, 2N3421, S	$V_{(BR)CEO}$	60 80	- - -	Vdc
Collector - Emitter Cutoff Current $V_{CE} = 80$ Vdc, $V_{BE} = -0.5$ Vdc $V_{CE} = 120$ Vdc, $V_{BE} = -0.5$ Vdc	2N3418, S, 2N3420, S 2N3419, S, 2N3421, S	I_{CEX}	- - -	0.3 0.3	µAdc
Collector - Emitter Cutoff Current $V_{CE} = 45$ Vdc $V_{CE} = 60$ Vdc	2N3418, S, 2N3420, S 2N3419, S, 2N3421, S	I_{CEO}	- - -	5.0 5.0	µAdc
Emitter - Base Cutoff Current $V_{EB} = 6.0$ Vdc, $I_C = 0$ $V_{EB} = 8.0$ Vdc, $I_C = 0$		I_{EBO}	- - -	0.5 10.0	µAdc

AEROFLEX
METELICS

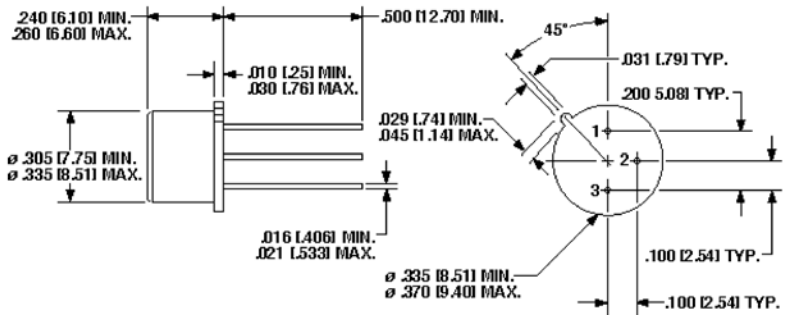
Electrical Characteristics -con't

ON Characteristics [1]		Symbol	Minimum	Maximum	Unit
Forward Current Transfer Ratio					
I_C = 100 mAdc, V_{CE} = 2.0 Vdc	2N3418, S, 2N3419, S		20		
	2N3420, S, 2N3421, S		40		
I_C = 1.0 Adc, V_{CE} = 2.0 Vdc	2N3418, S, 2N3419, S		20	60	
	2N3420, S, 2N3421, S	H_{FE}	40	120	
I_C = 2.0 Adc, V_{CE} = 2.0 Vdc	2N3418, S, 2N3419, S		15		
	2N3420, S, 2N3421, S		30		
I_C = 5.0 Adc, V_{CE} = 5.0 Vdc	2N3418, S, 2N3419, S		10		
	2N3420, S, 2N3421, S		15		
Base - Emitter Voltage					
I_C = 1.0 Adc, I_B = 0.1 Adc		$V_{BE(sat)}$	0.6	1.2	Vdc
I_C = 2.0 Adc, I_B = 0.2 Adc			0.7	1.4	
Collector - Emitter Saturation Voltage					
I_C = 1.0 Adc, I_B = 0.1 Adc		$V_{CE(sat)}$	- - -	0.25	Vdc
I_C = 2.0 Adc, I_B = 0.2 Adc			- - -	0.5	
DYNAMIC Characteristics					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio					
I_C = 0.1 Adc, V_{CE} = 10.0 Vdc, f = 20 MHz		$\lvert h_{fe} \rvert$	1.3	8.0	
Output Capacitance					
V_{CB} = 10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1.0 MHz		C_{obo}	- - -	150	pF
Switching Characteristics					
Delay Time	$V_{BE(off)}$ = -3.7 Vdc	t_d	- - -	0.08	µs
Rise Time	I_C = 1.0 Adc, I_{B2} = 100 mAdc	t_r	- - -	0.22	µs
Storage Time	$V_{BE(off)}$ = -3.7 Vdc	t_s	- - -	1.10	µs
Fall Time	I_C = 1.0 Adc, I_{B2} = -100 mAdc	t_f	- - -	0.20	µs

SAFE OPERATING AREA

DC Tests:	T_C = 100 °C, 1 Cycle, t = 1.0 s s	
Test 1:	V_{CE} = 5.0 Vdc, I_C = 3.0 Adc	
Test 2:	V_{CE} = 37 Vdc, I_C = 0.4 Adc	
Test 3:	V_{CE} = 60 Vdc, I_C = 0.185 mAdc	2N3418, S; 2N3420, S
	V_{CE} = 80 Vdc, I_C = 0.12 mAdc	2N3419, S; 2N3421, S

Outline Drawing



NOTE: Dimensions in Inches [mm]

Aeroflex / Metelics, Inc.

ISO 9001: 2008 certified companies

975 Stewart Drive,
Sunnyvale, CA 94085
Tel: (408) 737-8181
Fax: (408) 733-7645

54 Grenier Field Road,
Londonderry, NH 03053
Tel: (603) 641-3800
Fax: (603)-641-3500

Sales: 888-641-SEMI (7364)

Hi-Rel Components
9 Hampshire Street,
Lawrence, MA 01840
Tel: (603) 641-3800
Fax: (978) 683-3264

www.aeroflex.com/metelicsHRC

www.aeroflex.com/metelics ***metelics-sales@aeroflex.com***

AEROFLEX
A passion for performance.

Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.

Revision Date: 4/22/2014