



A Microsemi Company
580 Pleasant St.
Watertown, MA 02172

2N2222A DIE

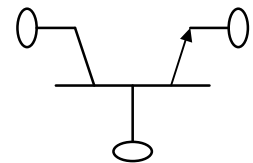
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DIE SPECIFICATION

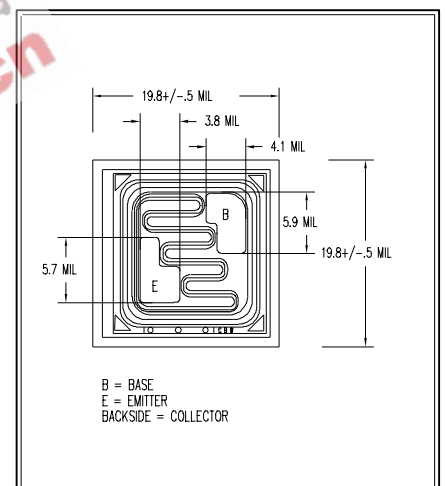
SWITCHING TRANSISTOR NPN SILICON

FEATURES:

- ELECTRICAL PERFORMANCE I.A.W. MIL-PRF-19500/255
- AVAILABLE IN WAFER OR CHIP FORM FOR HYBRID APPLICATIONS
- GENERAL PURPOSE-HIGH SPEED SWITCHING APPLICATIONS
- LOW $V_{CE(sat)}$: .3V @ $I_C = 150 \text{ mAdc}$



PHYSICAL DIMENSIONS



Absolute Maximum Ratings:

Symbol	Parameter	Limit	Unit
V_{ce}	Collector-Emitter Voltage	50	Vdc
V_{cb}	Collector-Base Voltage	75	Vdc
V_{eb}	Emitter-Base Voltage	6.0	Vdc
I_c	Collector Current- Continuous	800	mAdc
T_j, T_{stg}	Operating Junction & Storage Temperature Range	-65 to +200	°C

Packaging Options:

W: Wafer (100% probed) U: Wafer (sample probed)
D: Chip (Waffle Pack) B: Chip (Vial)
V: Chip (Waffle Pack, 100% visually inspected) X: Other

Metallization Options:

Standard: Al Top / Au Backside (No Dash #)
Dash 1: Al Top / TiPdAg Backside

Processing Options:

Standard: Capable of JANTXV applications (No Suffix)
Suffix C: Commercial
Suffix S: Capable of S-Level equivalent applications

ORDERING INFORMATION:

PART #: 2N2222A_ _ - _
First Suffix Letter: Packaging Option
Second Suffix Letter: Processing Option
Dash #: Metallization Option

Sertech reserves the right to make changes to any product design, specification, or other information at any time without prior notice.

Data Sheet, Die, 2N2222A MSW Rev. - 4/15/98

Electrical Characteristics @ Tj = 25 °C

Symbol	Parameter	Conditions	Min	Max	Unit
OFF CHARACTERISTICS					
V(BR)CBO	Breakdown Voltage, Collector to Base	Bias Cond. D, IC=10uAdc	75		Vdc
V(BR)EBO	Breakdown Voltage, Emitter to Base	Bias Cond. D, IE=10uAdc	6		Vdc
V(BR)CEO	Breakdown Voltage, Collector to Emitter	Bias Cond. D, IC= 10mAdc, pulsed	50		Vdc
ICES	Collector to Emitter Cutoff Current	Bias Cond. D, VCE=50Vdc		50	nAdc
ICBO1	Collector to Base Cutoff Current	Bias Cond. D, VCB=60Vdc		10	nAdc
IEBO	Emitter to Base Cutoff Current	Bias Cond. D, VEB= 4Vdc		10	nAdc
ON CHARACTERISTICS					
hFE1	Forward-Current Transfer Ratio	VCE=10Vdc, IC=0.1mAdc	50		
hFE2	Forward-Current Transfer Ratio	VCE=10Vdc, IC=1.0mAdc	75	325	
hFE3	Forward-Current Transfer Ratio	VCE=10Vdc, IC=10mAdc	100		
hFE4	Forward-Current Transfer Ratio	VCE=10Vdc, IC=150mAdc, pulsed	100	300	
hFE5	Forward-Current Transfer Ratio	VCE=10Vdc, IC=500mAdc, pulsed	30		
VCE(sat)1	Collector to Emitter Saturation Voltage	IC=150mAdc, IB=15mAdc, pulsed		0.3	Vdc
VCE(sat)2	Collector to Emitter Saturation Voltage	IC=500mAdc, IB=50mAdc, pulsed		1	Vdc
VBE(sat)1	Base to Emitter Saturation Voltage	IC=150mAdc, IB=15mAdc, pulsed	0.6	1.2	Vdc
VBE(sat)2	Base to Emitter Saturation Voltage	IC=500mAdc, IB=50mAdc, pulsed		2	Vdc
SMALL SIGNAL CHARACTERISTICS					
hfe	Short Circuit Forward Current Xfer Ratio	VCE= 10Vdc, IC =1mAdc, f= 1kHz	50		
/hfe/	Magnitude of Short Circuit Forward Current Transfer Ratio	VCE= 20Vdc, IC =50mAdc, f=100MHz	2.5		
Cobo	Output Capacitance	VCB= 10Vdc, IE =0, 100kHz< f <1MHz		8	pF
Cibo	Input Capacitance	VEB= 2.0Vdc, IC=0, 100kHz< f <1MHz		25	pF
SWITCHING CHARACTERISTICS					
ton	Saturated Turn-on Time	As defined in 19500/255 Figure 8		45	nS
toff	Saturated Turn-off Time	As defined in 19500/255 Figure 9		300	nS