

# SILICON BIPOLAR TRANSISTORS

MICROWAVE SEMICONDUCTOR

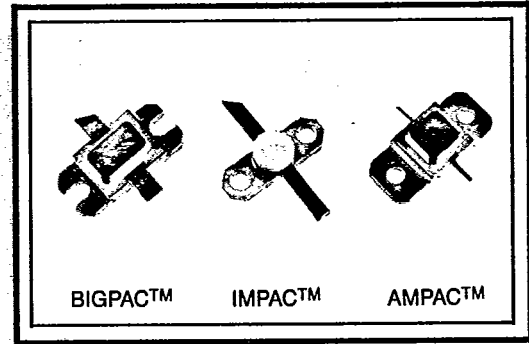
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7-33-01

## AVIONICS PULSED POWER TRANSISTORS

MSC Avionics Power Transistors are hermetically sealed Silicon N-P-N grounded-base transistors providing high gain, efficiency, and pulsed output power at frequencies up to 1215 MHz. These transistors are available in the internal input/output matched AMPACT™/BIGPACT™ packages and internal input matched IMPACT™ package. They are ideally suited for microwave integrated circuit (MIC) designs over broad bandwidths.



### DEVICE CHARACTERISTICS (MEASURED AT 25°C): CLASS C AMPLIFIER (PW = 10 μsec; DUTY = 1 %)

MODEL NUMBER	TEST FREQ. (MHz)	P <sub>OUT</sub> MIN. (W)	P <sub>IN</sub> (W)	EFF. MIN. (%)	V <sub>CC</sub> (V)	θ <sub>JC</sub> MAX. (°C/W) <sup>(1)</sup>	V <sub>CBO</sub> MIN. (V)	I <sub>CS</sub> MAX. (mA)	GEOMETRY	BALLASTING	METAL	CASE STYLE CODE
MSC 1600M	1090	600	150	35	50	0.09	65	50	M	—	B	038
MSC 81600M	1090	600	150	35	50	0.09	65	60	O	S	G	038
MSC 1550M	1025-1150	550	150	35	50	0.09	65	50	M	—	B	038
MSC 81550M	1025-1150	550	150	35	50	0.09	65	60	O	S	G	038
MSC 1450M	1090	450	90	38	50	0.15	65	35	M	—	B	038
MSC 81450M	1090	450	90	40	50	0.13	65	35	O	S	G	038
MSC 1400M	1025-1150	400	90	35	50	0.15	65	35	M	—	B	038
MSC 81400M	1025-1150	400	90	40	50	0.13	65	35	O	S	G	038
MSC 81390M	1090	390	80	35	50	0.15	65	35	O	S	G	042
MSC 1350M	1090	350	70	35	50	0.20	65	25	M	—	B	042
MSC 81350M	1090	350	70	40	50	0.20	65	25	O	S	G	042
MSC 81325M	1025-1150	325	70	40	50	0.20	65	25	O	S	G	042
MSC 1300M	1090	300	70	35	50	0.20	65	25	M	—	B	042
MSC 81300M	1090	300	70	40	50	0.20	65	25	O	S	G	042
MSC 1250M	1025-1150	250	60	35	50	0.20	65	25	M	—	B	042
MSC 81250M	1025-1150	250	60	40	50	0.20	65	25	O	S	G	042
MSC 1175M	1025-1150	175	30	35	50	0.30	65	12.5	M	—	B	042
MSC 81175M	1025-1150	175	30	40	50	0.30	65	12.5	O	S	G	042
MSC 1150M	1025-1150	150	25	35	50	0.30	65	12.5	M	—	B	042
MSC 81150M	1025-1150	150	25	40	50	0.30	65	12.5	O	S	G	042
MSC 1150MP	1025-1150	145	25	35	50	0.30	65	12.5	M	—	B	055
MSC 1090M	1025-1150	90	13	35	50	0.60	65	6.3	M	—	B	068
MSC 1075M	1025-1150	75	13	35	50	0.60	65	6.3	M	—	B	068
MSC 1035M	1025-1150	30	3	35	50	1.0	65	5.0	M	—	B	068
MSC 81020M	1025-1150	20	3.5	40	28	1.5	55	5.0	O	S	G	064
MSC 1015M	1025-1150	15	1.5	35	50	2.0	65	2.5	M	—	B	068
MSC 1004M	1025-1150	4.0	0.5	35	28	5.0	45	1.0	O	S	P	068
MSC 1002M	1025-1150	2.0	0.25	35	35	10	45	1.0	O	S	P	068
MSC 1000M*	1025-1150	0.6	0.05	—	18	35	50	1.0	M	F	B	058

NOTES: (1) Measured by IR Scanning of Hot Spot Junction temperature at rated RF operating conditions (see MSC Application Note GP-201).  
 (2) Contact factory for availability of devices in alternate case styles  
 (3) \*Class A CW operation

Geometry  
 M—Matrix  
 O—Overlay

Ballasting  
 F—Finger  
 S—Site

Metal System  
 P—Aluminum with Polysilicon barrier  
 B—Aluminum with Tungsten barrier  
 G—Gold with Metal/Polysilicon barrier

# SILICON BIPOLAR TRANSISTORS

MICROWAVE SEMICONDUCTOR

05E D

6123495 0000791 4

T-33-01

## PACKAGE CONFIGURATIONS

### Mechanical Capability Specifications STRIPAC® Transistor Series

Dimensions: Outline Drawing.

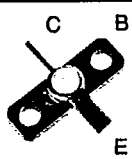

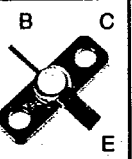
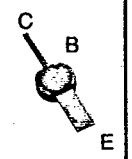
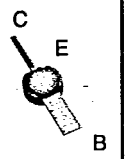
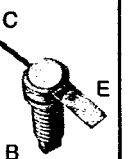
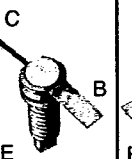
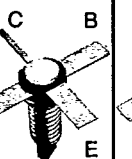

Hermeticity:  $5 \times 10^{-7}$  Atm cc/sec.

Solderability: Per MIL-STD-750.

Acceleration: Per MIL-STD-750; 20,000 G in any plane.

Marking: Per MIL-S-19500, MSC Type Number, 3 Digit Date Code.

Package: A brazed ceramic package assuring long term integrity of hermetic seals. Leads of nickel base material with minimum 50 microinches of gold plating.

 CASE STYLE 010			 CASE STYLE 011			 CASE STYLE 012			 CASE STYLE 013			 CASE STYLE 014			 CASE STYLE 016			 CASE STYLE 017			 CASE STYLE 026			 CASE STYLE 027														
STRIPAC GROUNDED FLANGE						MICPAC						GROUNDED STUD						ISOLATED STUD																				
COMMON BASE			COMMON EMITTER			COMMON* COLLECTOR			COMMON BASE			COMMON EMITTER			COMMON BASE			COMMON EMITTER																				
MSC 81118	MSC 81119*	N/A	MSC 81118	MSC 81119*	N/A	MSC 81118	MSC 81119*	N/A	MSC 81904	C/F	MSC 81002	MSC 81123*	N/A	MSC 81090	MSC 81118	MSC 81119*	N/A	MSC 81118	MSC 81119*	N/A	MSC 81904	C/F	MSC 81002	MSC 81123*	N/A	MSC 81090	MSC 81118	MSC 81119*	N/A	MSC 81118	MSC 81119*	N/A	MSC 81904	C/F	MSC 81002	MSC 81123*	N/A	MSC 81090
MSC 81111	MSC 81120*	N/A	MSC 81111	MSC 81120*	N/A	MSC 81111	MSC 81120*	N/A	MSC 81905	C/F	MSC 81005	MSC 81124*	N/A	MSC 81069	MSC 81111	MSC 81120*	N/A	MSC 81111	MSC 81120*	N/A	MSC 81905	C/F	MSC 81005	MSC 81124*	N/A	MSC 81069	MSC 81111	MSC 81120*	N/A	MSC 81111	MSC 81120*	N/A	MSC 81905	C/F	MSC 81005	MSC 81124*	N/A	MSC 81069
MSC 81058	MSC 81121*	N/A	MSC 81058	MSC 81121*	N/A	MSC 81058	MSC 81121*	N/A	MSC 81906	C/F	MSC 81010	MSC 81109*	N/A	MSC 81080	MSC 81058	MSC 81121*	N/A	MSC 81058	MSC 81121*	N/A	MSC 81906	C/F	MSC 81010	MSC 81109*	N/A	MSC 81080	MSC 81058	MSC 81121*	N/A	MSC 81058	MSC 81121*	N/A	MSC 81906	C/F	MSC 81010	MSC 81109*	N/A	MSC 81080
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MSC 81406	MSC 81914*	C/F	MSC 81406	MSC 81914*	C/F	MSC 81406	MSC 81914*	C/F	MSC 81908	MSC 81920*	MSC 81910	MSC 81916*	MSC 81912	MSC 81918*	MSC 81406	MSC 81914*	C/F	MSC 81406	MSC 81914*	C/F	MSC 81908	MSC 81920*	MSC 81910	MSC 81916*	MSC 81912	MSC 81918*	MSC 81406	MSC 81914*	C/F	MSC 81406	MSC 81914*	C/F	MSC 81908	MSC 81920*	MSC 81910	MSC 81916*	MSC 81912	MSC 81918*
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MSC 82001	MSC 82100	MSC 82018	MSC 82001	MSC 82100	MSC 82018	MSC 82001	MSC 82100	MSC 82018	MSC 82905	MSC 82906	MSC 82014	MSC 82024	MSC 82030	MSC 82040	MSC 82001	MSC 82100	MSC 82018	MSC 82001	MSC 82100	MSC 82018	MSC 82905	MSC 82906	MSC 82014	MSC 82024	MSC 82030	MSC 82040	MSC 82001	MSC 82100	MSC 82018	MSC 82001	MSC 82100	MSC 82018	MSC 82905	MSC 82906	MSC 82014	MSC 82024	MSC 82030	MSC 82040
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