



SOLID STATE MICROWAVE

2N4251

THOMSON-CSF COMPONENTS CORPORATION

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NPN SILICON SMALL SIGNAL SWITCH

DESCRIPTION

SSS device type 2N4251 is an NPN silicon epitaxial planar transistor that was designed primarily for use as a switching transistor. The process techniques used for this transistor allows it to be utilized in radiation resistant applications.

FEATURES:

- High gain bandwidth product f_T
- High h_{FE}
- Low $V_{CE(SAT)}$
- Low C_{ob}
- Low C_{ib}

ABSOLUTE MAX. RATINGS (+25°C except where noted)

V_{CBO}	: Collector - Base Voltage	15.0 V
V_{CEO}	: Collector - Emitter Voltage	10.0 V
V_{EBO}	: Emitter - Base Voltage	4.5 V
I_C (max)	: Collector Current	100 mA
P_D	: Total Device Dissipation at 25°C	1.3 W
ϕ_{JC}	: Thermal Resistance to Case	134°C/W
T_J	: Junction Temperature	-65°C to +200°C
T_{stg}	: Storage Temperature	-65°C to +200°C



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ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector Emitter Breakdown Voltage*	BV_{CEO}	$I_C = 10mA, I_B = 0$	10.0	-	-	Vdc
Collector Base Breakdown Voltage	BV_{CBO}	$I_C = 1.0mA, I_E = 0$	15.0	-	-	Vdc
Emitter Base Breakdown Voltage	BV_{EBO}	$I_E = 10\mu A, I_C = 0$	4.5	-	-	Vdc
Collector Cutoff Current	I_{CBO}	$V_{CB} = 5V, I_E = 0$	100.0	-	1.0	μA
DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 10mA$	100.0	-	300.0	
Collector Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 10mA, I_B = 1.0mA$	-	-	0.15	Vdc

*Pulsed Through a 25mH Inductor

DYNAMIC CHARACTERISTICS

Gain Bandwidth @ 200mHz	f_T	$V_{CE} = 5V, I_C = 10mA$	1300.0	-	-	mHz
Output Capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1.0MHz$	-	-	2.0	pF
Input Capacitance	C_{ib}	$V_{EB} = 0.5V, I_C = 0, f = 1.0MHz$	-	-	4.0	pF
Turn on Time	t_{on}	$I_B = 1.0mA, I_C = 10mA$	-	-	20.0	ns
Turn off Time	t_{off}	$I_B = 1.0mA, I_C = 10mA$	-	-	60.0	ns
Charge Storage Time	t_s	$I_B = 10mA, I_C = 10mA$	-	-	80.0	ns

