

# Transient Voltage Suppressor Diode

## **PSMA20A**

U<sub>br</sub> 22.2V / 1mA

# DATASHEET

OEM – Philips

Source: Philips Databook 1999

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 Transient voltage suppressor diodes PSMA8.5A to PSMA78A
 

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**ELECTRICAL CHARACTERISTICS****Total series**

$T_J = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_F$	forward voltage	$I_F = 0.5\text{ A}$	–	1.2	V
$T_{stg}$	storage temperature		–65	+175	°C
$T_J$	junction temperature		–65	+175	°C

**Per type**

$T_J = 25\text{ °C}$  unless otherwise specified.

DEVICE (note 1)	REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE		REVERSE VOLTAGE (max) @ $I_{RSM}$ (CLAMPING VOLTAGE)	REVERSE SURGE CURRENT (max)	REVERSE LEAKAGE CURRENT (max) @ $V_{RWM}$
	$V_{RWM}$ (V)	$V_{BR}$ min. (V)	$I_T$ (mA)	$V_{RSM}$ (V)	$I_{RSM}$ (A)	$I_R$ ( $\mu$ A)
PSMA8.5A	8.5	9.44	1	14.4	27.8	5.0
PSMA9.0A	9.0	10.0	1	15.4	26.0	2.5
PSMA10A	10	11.1	1	17.0	23.5	2.5
PSMA11A	11	12.2	1	18.2	22.0	2.5
PSMA12A	12	13.3	1	19.9	20.1	2.5
PSMA13A	13	14.4	1	21.5	18.6	2.5
PSMA14A	14	15.6	1	23.2	17.2	2.5
PSMA15A	15	16.7	1	24.4	16.4	2.5
PSMA16A	16	17.8	1	26.0	15.4	2.5
PSMA17A	17	18.9	1	27.6	14.5	2.5
PSMA18A	18	20.0	1	29.2	13.7	2.5
PSMA20A	20	22.2	1	32.4	12.3	2.5
PSMA22A	22	24.4	1	35.5	11.3	2.5
PSMA24A	24	26.7	1	38.9	10.3	2.5
PSMA26A	26	28.9	1	42.1	9.5	2.5
PSMA28A	28	31.1	1	45.4	8.8	2.5
PSMA30A	30	33.3	1	48.4	8.3	2.5
PSMA33A	33	36.7	1	53.3	7.5	2.5

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DEVICE (note 1)	REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE		REVERSE VOLTAGE (max) @ $I_{RSM}$ (CLAMPING VOLTAGE)	REVERSE SURGE CURRENT (max)	REVERSE LEAKAGE CURRENT (max) @ $V_{RWM}$
	$V_{RWM}$ (V)	$V_{BR}$ min. (V)	$I_T$ (mA)	$V_{RSM}$ (V)	$I_{RSM}$ (A)	$I_R$ ( $\mu$ A)
PSMA36A	36	40.0	1	58.1	6.9	2.5
PSMA40A	40	44.4	1	64.5	6.2	2.5
PSMA43A	43	47.8	1	69.4	5.8	2.5
PSMA45A	45	50.0	1	72.2	5.5	2.5
PSMA48A	48	53.3	1	77.4	5.2	2.5
PSMA51A	51	56.7	1	82.4	4.9	2.5
PSMA54A	54	60.0	1	87.1	4.6	2.5
PSMA58A	58	64.4	1	93.6	4.3	2.5
PSMA60A	60	66.7	1	96.8	4.1	2.5
PSMA64A	64	71.1	1	103.0	3.9	2.5
PSMA70A	70	77.8	1	113.0	3.5	2.5
PSMA75A	75	83.3	1	121.0	3.3	2.5
PSMA78A	78	86.7	1	126.0	3.2	2.5

**Note**

1. Tolerance and Voltage Designation: Tolerance designation - The type number listed indicates a tolerance of  $\pm 5\%$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		25	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	100	K/W
		note	150	K/W

**Notes**

1. Device mounted on an  $Al_2O_3$  printed-circuit board, 0.7 mm thick; thickness of Cu-layer  $\geq 35\ \mu m$ , see Fig.4.
2. Device mounted on an epoxy-glass printed-circuit board, 1.5 mm thick; thickness of Cu-layer  $\geq 40\ \mu m$ , see Fig.4.  
For more information please refer to the 'General part of the associated handbook'.

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GRAPHICAL DATA

