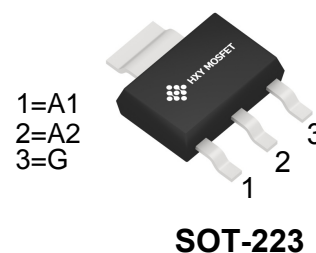




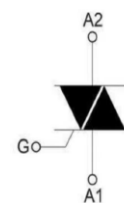
Description

The Z0109NN5AA4 provide high dv/dt rate with strong resistance to electromagnetic interface. They are especially recommended for use on residual current circuit breaker, straight hair, igniter etc.



Main Features

symbol	value	unit
$I_{T(RMS)}$	1.0	A
I_{GT}	10	mA
V_{DRM}/V_{RRM}	800	V



Absolute Maximum Ratings

Symbol	Parameter	Conditions	Value	Unit
V_{DRM}/V_{RRM}	repetitive peak off-state voltage		800	V
$I_{T(RMS)}$	RMS on-state current		1	A
I_{TSM}	Non repetitive surge peak on-state current	$t = 20ms$ $T_j = 25^\circ C$	10	A
		$t = 16.7ms$ $T_j = 25^\circ C$	8	
I^2t	$I^2 t$ for fusing	$t = 10 ms$	1	$A^2 s$
di/dt	Critical-rate of rise of commutation current	$I_G = 2I_{GT}$ $t_r \leq 100ns$ $F = 120Hz$	50 10	A/us
I_{GM}	Peak Gate Current	$T_j = 125^\circ C$ $t_p = 20\mu s$	0.3	A
V_{GM}	Peak gate voltage	$T_j = 125^\circ C$	1	V
P_{GM}	Peak gate power	$T_j = 125^\circ C$	0.8	W
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125^\circ C$	0.4	W
T_j	Junction Temperature	-	125	$^\circ C$
T_{stg}	Storage Temperature	-	-40 ~ 150	$^\circ C$

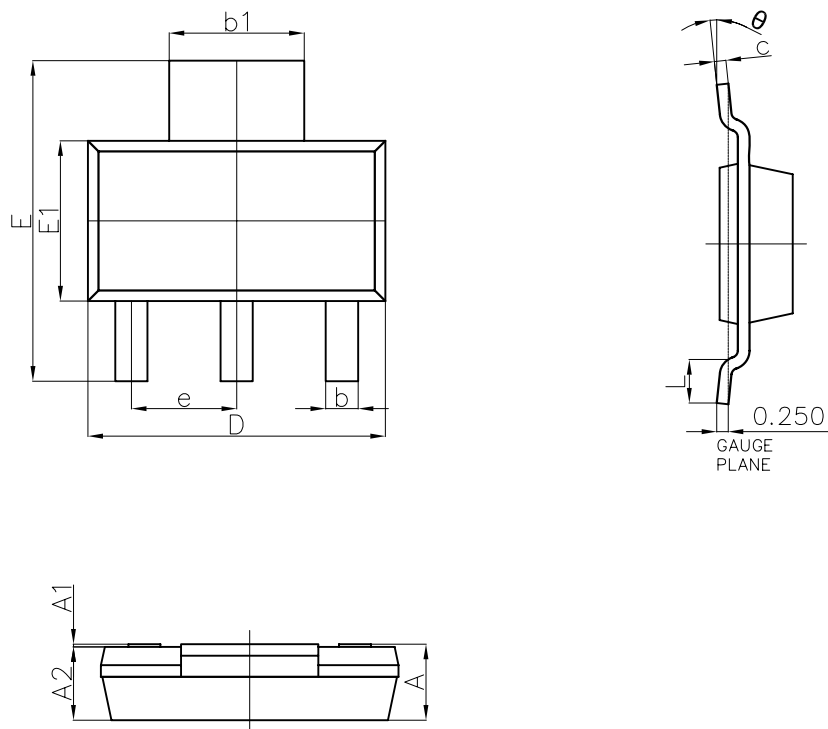


Electrical Characteristics ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Parameter		Symbol	Test conditions		Min	Typ	Max	Unit
Repetitive Peak Off-State Current Repetitive Peak Reverse Current		$I_{\text{DRM}}, I_{\text{RRM}}$	$V_{\text{DRM}} = V_{\text{RRM}} \quad T_{\text{j}} = 25^{\circ}\text{C}$				5	μA
			$V_{\text{DRM}} = V_{\text{RRM}} \quad T_{\text{j}} = 125^{\circ}\text{C}$				1	mA
Gate non-trigger voltage		V_{GD}	$V_{\text{D}} = 1/2 V_{\text{DRM}}$		0.2			V
On-state voltage		V_{TM}	$I_{\text{T}} = 1\text{A}, t_{\text{p}} = 380\mu\text{s}$				1.65	V
Gate trigger current	I-II-III	I_{GT}	$V_{\text{D}} = 12\text{V}, R_{\text{L}} = 100\Omega$				10	mA
	IV						10	
Gate trigger voltage	I	V_{GT}	$T_2(+), G(+)$	$V_{\text{D}} = 12\text{V}$ $R_{\text{L}} = 100\Omega$		0.8	2	V
	II		$T_2(+), G(-)$			0.8	2	
	III		$T_2(-), G(-)$			0.8	2	
	IV		$T_2(-), G(+)$			0.8	2.5	
Holding current		I_{H}	$V_{\text{D}} = 12\text{V}, I_{\text{GT}} = 100\text{mA}$				30	mA
Critical-rate of rise of commutation voltage		dV/dt	$V_{\text{DM}} = 67\% V_{\text{DRM}}$ Gate open $T_{\text{j}} = 125^{\circ}\text{C}$				50	V/us
Rate of change of commutating voltage		$(dI/dt)_{\text{c}}$	$V_{\text{DM}} = 400\text{V}, T_{\text{j}} = 125^{\circ}\text{C}$ $(dI/dt)_{\text{c}} = 5.4\text{A/ms}$ Gate open				20	V/us
Turn-on time		t_{gt}	$I_{\text{TM}} = 16\text{A}, V_{\text{DM}} = V_{\text{DRM(MAX)}}$ $I_{\text{G}} = 0.1\text{A}, dI_{\text{G}}/dt = 5\text{A}/\mu\text{S}$				2	us



SOT-223 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	—	1.800	—	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300(BSC)		0.091(BSC)	
L	0.750	—	0.030	—
θ	0°	10°	0°	10°



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