

# NIC9N05TS1, NIC9N05ATS1

## Protected Power MOSFET

2.6 A, 52 V, N-Channel, Logic Level,  
Clamped MOSFET w/ ESD Protection



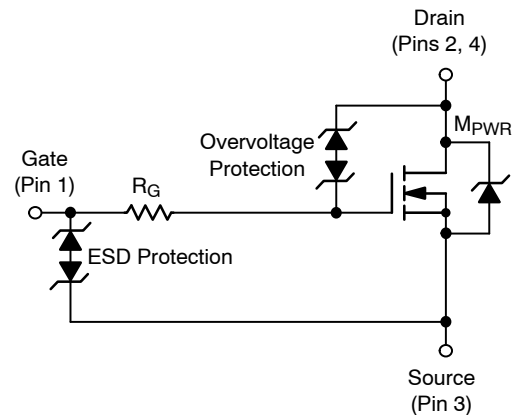
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MAXIMUM RATINGS ( $T_J = 25^\circ\text{C}$  unless otherwise specified)

Rating	Symbol	Value	Unit
Drain-to-Source Voltage Internally Clamped	$V_{DSS}$	52-59	V
Gate-to-Source Voltage - Continuous	$V_{GS}$	$\pm 15$	V
Operating and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	$^\circ\text{C}$
Electro-Static Discharge Capability (HBM) (MM)	ESD	5000 500	V

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



### ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

# NIC9N05TS1, NIC9N05ATS1

## MOSFET ELECTRICAL CHARACTERISTICS ( $T_J = 25^\circ\text{C}$ unless otherwise specified) (Note 1)

Characteristic	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Drain-to-Source Breakdown Voltage ( $V_{GS} = 0\text{ V}$ , $I_D = 1.0\text{ mA}$ , $T_J = 25^\circ\text{C}$ )	$V_{(BR)DSS}$	52	55	59	V
Zero Gate Voltage Drain Current ( $V_{DS} = 40\text{ V}$ , $V_{GS} = 0\text{ V}$ )	$I_{DSS}$			10	$\mu\text{A}$
Gate-Body Leakage Current ( $V_{GS} = \pm 8\text{ V}$ , $V_{DS} = 0\text{ V}$ ) ( $V_{GS} = \pm 14\text{ V}$ , $V_{DS} = 0\text{ V}$ )	$I_{GSS}$		$\pm 22$	$\pm 10$	$\mu\text{A}$
<b>ON CHARACTERISTICS</b>					
Gate Threshold Voltage ( $V_{DS} = V_{GS}$ , $I_D = 100\ \mu\text{A}$ )	$V_{GS(th)}$	1.3	1.75	2.5	V
Static Drain-to-Source On-Resistance ( $V_{GS} = 3.5\text{ V}$ , $I_D = 0.6\text{ A}$ ) ( $V_{GS} = 4.0\text{ V}$ , $I_D = 1.5\text{ A}$ ) ( $V_{GS} = 10\text{ V}$ , $I_D = 2.6\text{ A}$ )	$R_{DS(on)}$		190 165 107	380 200 125	$\text{m}\Omega$
<b>SOURCE-DRAIN DIODE CHARACTERISTICS</b>					
Forward On-Voltage	$I_S = 2.6\text{ A}$ , $V_{GS} = 0\text{ V}$ $I_S = 2.6\text{ A}$ , $V_{GS} = 0\text{ V}$ , $T_J = 125^\circ\text{C}$	$V_{SD}$		0.81 0.66	1.5 V

1. Wafers tested prior to sawing.

## ORDERING INFORMATION

Device	Shipping
NIC9N05TS1	5000 / Reel
NIC9N05ATS1	5000 / Reel

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