NIC9N05TS1, NIC9N05ATS1

Protected Power MOSFET

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

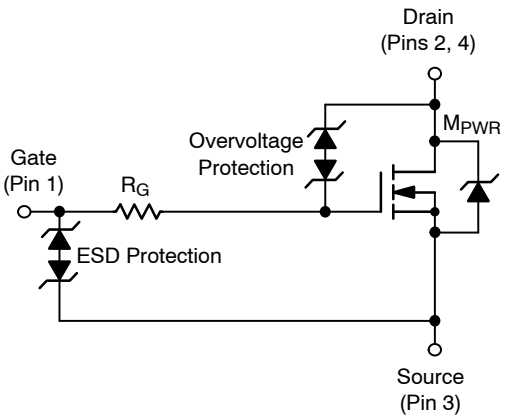
ON Semiconductor®

http://onsemi.com

MAXIMUM RATINGS (T_J = 25°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}	±15	V
Operating and Storage Temperature Range	T_J, T_{stg}	−55 to 150	°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.

MOSFET ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise specified) (Note 1)

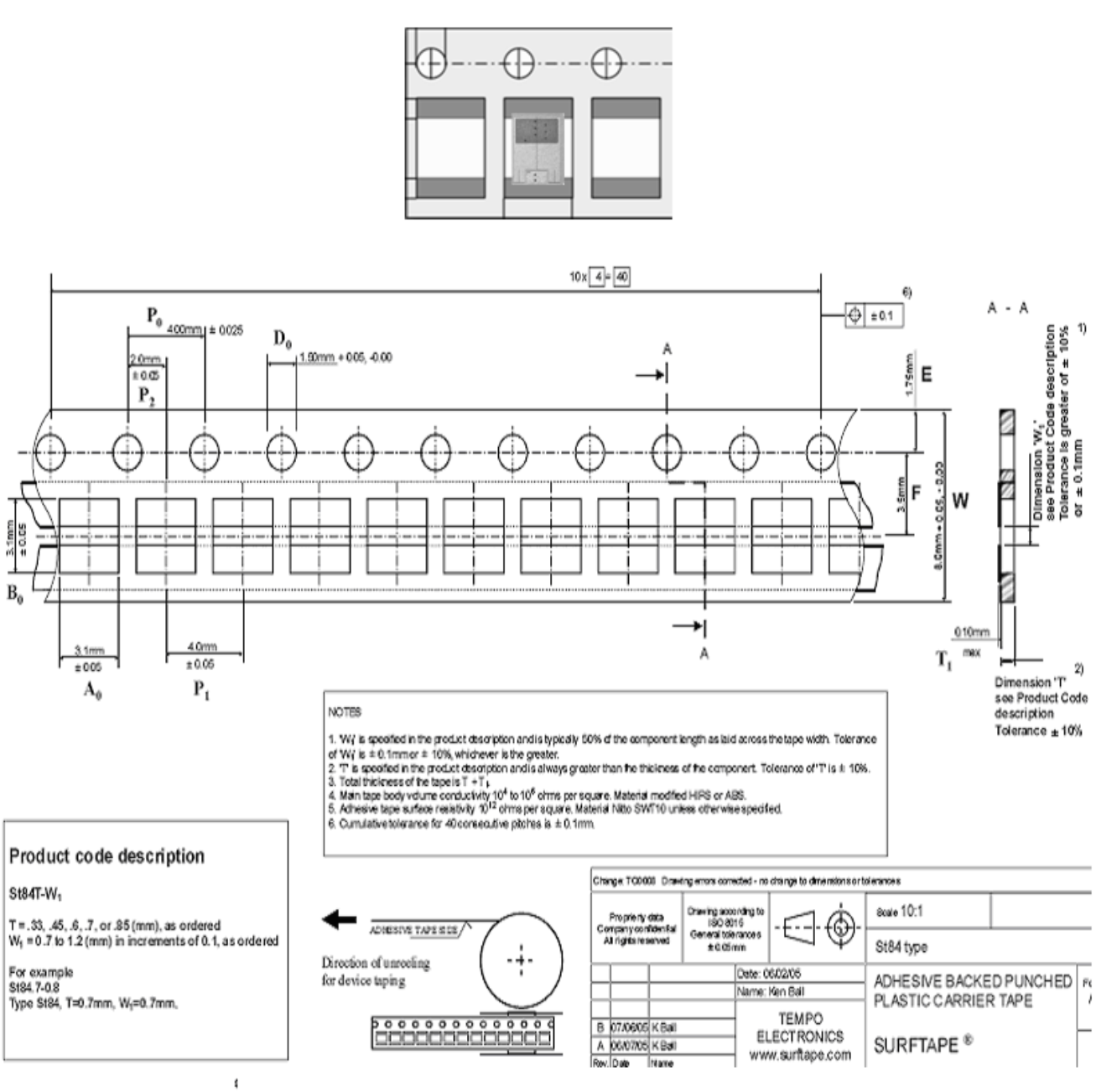
Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain−to−Source Breakdown Voltage (V_{GS} = 0 V, I_D = 1.0 mA, T_J = 25°C)		$V_{(BR)DSS}$	52	55	59	V
Zero Gate Voltage Drain Current (V_{DS} = 40 V, V_{GS} = 0 V)		I_{DSS}			10	μA
Gate−Body Leakage Current (V_{GS} = ±8 V, V_{DS} = 0 V) (V_{GS} = ±14 V, V_{DS} = 0 V)		I_{GSS}		 ±22	±10	μA
ON CHARACTERISTICS						
Gate Threshold Voltage (V_{DS} = V_{GS}, I_D = 100 μA)		$V_{GS(th)}$	1.3	1.75	2.5	V
Static Drain−to−Source On−Resistance (V_{GS} = 3.5 V, I_D = 0.6 A) (V_{GS} = 4.0 V, I_D = 1.5 A) (V_{GS} = 10 V, I_D = 2.6 A)		$R_{DS(on)}$		190 165 107	380 200 125	mΩ
SOURCE−DRAIN DIODE CHARACTERISTICS						
Forward On−Voltage	I_S = 2.6 A, V_{GS} = 0 V I_S = 2.6 A, V_{GS} = 0 V, T_J = 125°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

Layout view of the die in reel



NOTES

1. W_1 is specified in the product description and is typically 50% of the component length as laid across the tape width. Tolerance of W_1 is ± 0.1mm or ± 10%, whichever is the greater.
2. 'T' is specified in the product description and is always greater than the thickness of the component. Tolerance of 'T' is ± 10%.
3. Total thickness of the tape is $T + T_1$.
4. Main tape body volume conductivity 10^4 to 10^6 ohms per square. Material modified HIPS or ABS.
5. Adhesive tape surface resistivity 10^{12} ohms per square. Material Nitto SWT10 unless otherwise specified.
6. Cumulative tolerance for 40 consecutive pitches is ± 0.1mm.

Product code description

St84T-W_1

T = .33, .45, .6, .7, or .85 (mm), as ordered
W_1 = 0.7 to 1.2 (mm) in increments of 0.1, as ordered

For example
St84.7-0.8
Type St84, T=0.7mm, W_1=0.7mm.

Change TC0003 Drawing errors corrected - no change to dimensions or tolerances

Property data
Company confidential
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Drawing according to ISO 8015
General tolerances ± 0.05mm

Scale 10:1

St84 type

Rev.	Date	Name
B	07/06/05	K Ball
A	06/07/05	K Ball

Date: 06/02/05
Name: Ken Ball

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