



# TECHNICAL DATA SHEET

## TMS-90-SCE

Document number: TTDS-212  
Issue: 1  
Date: December 2011

## HEAT SHRINK MARKER SLEEVE

<b>Material Description:</b>	General purpose flame retarded, radiation cross-linked, modified polyolefin heat-shrinkable marker sleeve. Assembled as organized cut sleeves in a "ladder" configuration. 3:1 and 2:1 shrink ratio products available.
<b>Use:</b>	Identification of wires and cables by computer-based printing onto sleeves. Sleeves can also provide terminal insulation, strain relief and mechanical protection. Suitable for a wide variety of applications, including aerospace, military and rail applications.
<b>Print Method/Ribbon:</b>	See document 411-121005 – "Customer printer ribbon matrix", for current recommended printer / ribbon systems.  Sleeves may also be laser marked using the LMS 9000 <sup>1</sup> <sup>1</sup> Contact a TE Sales Engineer for further details
<b>Service Temperature:</b>	-55°C to +135°C (-67°F to +275°F).
<b>Maximum Storage Temperature:</b>	40°C (104°F).
<b>Minimum Recovery Temperature:</b>	120°C (248°F)
<b>Colors:</b>	White and Yellow.
<b>Shelf Life</b>	Storage life (pre-installation) shall be in compliance with AMS SAE 23053/5.  5 years when stored between 18°C to 35°C (64°F to 95°F).
<b>Specifications / Approvals:</b>	UL recognised standard 224 (File E35586). CSA certified (File LR31929). AMS SAE 23053/5 Class 1 NFF 00608 Cat A SAE AS 5942 Mark Adherence MIL 202F Method 215 Resistance to Solvents

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### PERFORMANCE:

#### Physical Properties

<b>Tensile Strength:</b>	10.3MPa minimum (SAE-AMS-DTL-23053/5).
<b>Ultimate Elongation:</b>	200% minimum (SAE-AMS-DTL-23053/5).
<b>2% Secant Modulus:</b>	172.4MPa maximum (SAE-AMS-DTL-23053/5).
<b>Longitudinal Change:</b>	±5% (SAE-AMS-DTL-23053/5).

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#### Thermal Properties

<b>Heat Ageing:</b>	100% UE retained and print legible after 336 hours at 175°C (347°F).
<b>Heat Shock:</b>	No cracking, dripping or flowing and print legible after 4 hours at 250°C (482°F).
<b>Low Temperature Flexibility:</b>	No cracking after 4 hours at -55°C (-67°F), followed by mandrel bend.

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#### Other Properties

<b>Resistance To Fungus:</b>	ISO EN 846 Method B: 56 days exposure. No change in mechanical and electrical properties. Print legible.
<b>Flammability:</b>	UL224 (C22.2 No. 198.1-99) Flame Test – All Tubing FED STAN 228 method 5221 ASTM D876  Burn time 30 seconds maximum. No flag burn; no burning of cotton or dripping.
<b>Water Absorption:</b>	0.5% maximum (ASTM D570), 24hours at 23°C.
<b>Dielectric Strength:</b>	19.7MV/m minimum (ASTM D2671).

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### FLUID RESISTANCE:

Sleeve properties after 24 hour immersion at 23°C. Samples tested 30 minutes after removal from the fluid in accordance with SAE AMS 23053/5, Class 1.  
 Printed samples rubbed with eraser in accordance with SAE AS 81531.

THREAT	TEST	TYPICAL RESULT	LEGIBILITY
<b>Hydraulic Fluid</b> (MIL PRF 5606)	Tensile Strength (MPa)	11	Pass
	Dielectric Strength (kV/mm)	63	
<b>Military Jet Fuel JP-8</b> (MIL-DTL-83133)	Tensile Strength (MPa)	11	Pass
	Dielectric Strength (kV/mm)	67	
<b>Rocket Propellant JP-10</b> (MIL-P-87107)	Tensile Strength (MPa)	10	Pass
	Dielectric Strength (kV/mm)	40	
<b>Synthetic Lubricating Oil,</b> Turbo prop and turbo jet aircraft gas turbines (MIL PRF 7808)	Tensile Strength (MPa)	14	Pass
	Dielectric Strength (kV/mm)	53	
<b>Synthetic Lubricating Oil,</b> Civil and military aircraft gas turbines (MIL PRF 23699)	Tensile Strength (MPa)	15	Pass
	Dielectric Strength (kV/mm)	56	
<b>5 % NaCl</b> (A-A-694)	Tensile Strength (MPa)	16	Pass
	Dielectric Strength (kV/mm)	60	
<b>De-icing Fluid</b> (SAE AS 8243)	Tensile Strength (MPa)	15	Pass
	Dielectric Strength (kV/mm)	52	
<b>Synthetic Hydraulic Fluid</b> Military aircraft, Fire Resistant, Hydrocarbon Base, Aircraft (MIL-PRF-83282)	Tensile Strength (MPa)	15	Pass
	Dielectric Strength (kV/mm)	53	

**For full product performance details see TE Connectivity specification RW-2530**

Some types of neoprene insulation used in jackets contain additives that can migrate to the surface and discolor the polyolefin TMS-90-SCE sleeves. Any discoloration is dependent on the composition of the neoprene, combined with application conditions. Users should independently evaluate the suitability of TMS-90-SCE sleeves for applications involving neoprene-jacketed cables.

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Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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## JONHON

«**JONHON**» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«**FORSTAR**» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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