

PROTECTION PRODUCTS
Absolute Maximum Ratings

Rating	Symbol	Value	Units
Peak Pulse Power (tp = 1.2/50µs)	P_{pk}	140	W
Peak Pulse Current (tp = 1.2/50µs)	I_{pp}	2	A
Maximum Steady State Forward Current ⁽¹⁾	I_F	200	mA
ESD per IEC 61000-4-2 (Air) ⁽²⁾ ESD per IEC 61000-4-2 (Contact) ⁽²⁾	V_{ESD}	+/- 20 +/- 15	kV
Operating Temperature	T_J	-40 to +125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Notes

(1): If multiple diodes conduct in the forward direction at any instant, the sum of the currents must not exceed this rating.

(2): ESD Gun return path to Ground Reference Plane (GRP)

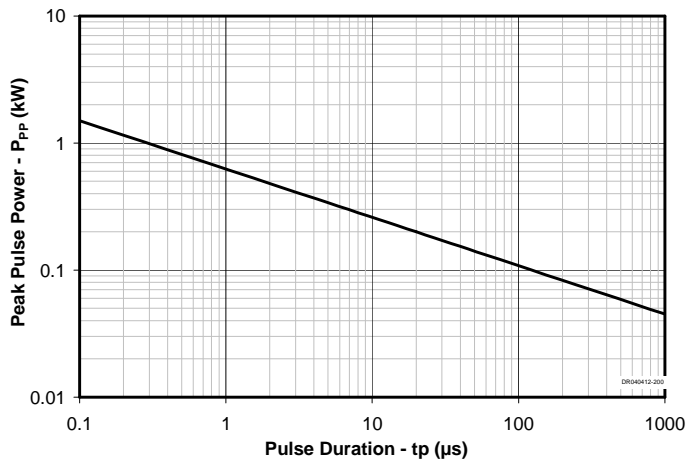
Electrical Characteristics (T=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				36	V
Reverse Breakdown Voltage	V_{BR}	$I_t = 1mA$; T = -40°C to 125°C	37	42	55	V
Reverse Leakage Current	I_R	$V_{RWM} = 36V$	T=25°C	0.01	1	µA
			T=125°C		0.5	
Forward Voltage Drop	V_F	$I_F = 200mA$			1.0	V
Clamping Voltage	V_C	$I_{pp} = 2A$, tp = 1.2/50µs		55	65	V
Junction Capacitance	C_j	$V_R = 0V$, f = 1MHz	T=25°C	25	50	pF
			T=125°C		50	

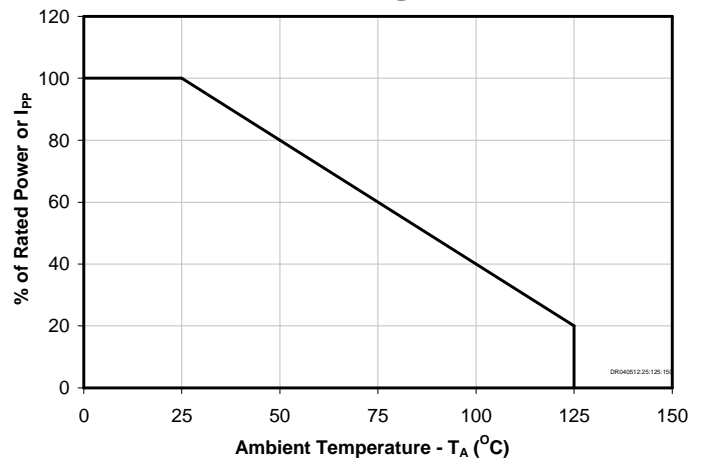
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Typical Characteristics

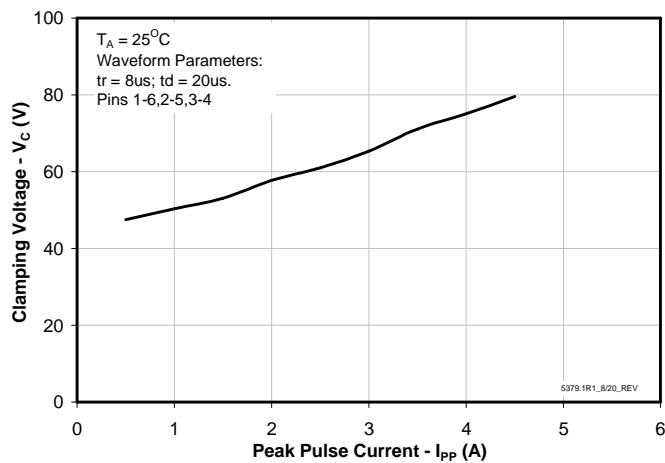
Non-Repetitive Peak Pulse Power vs. Pulse Time



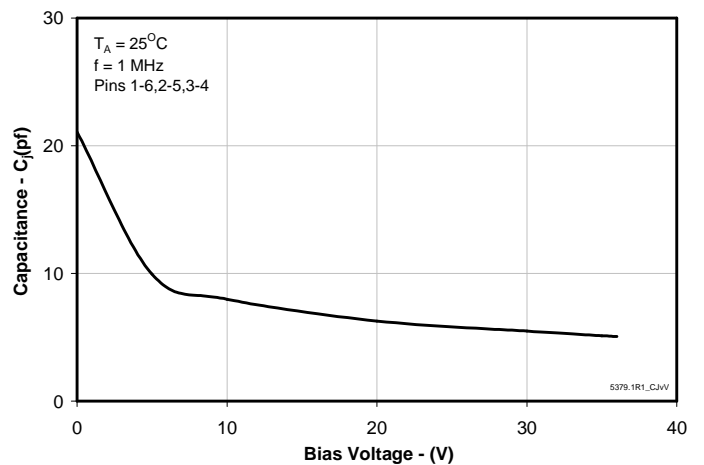
Power Derating Curve



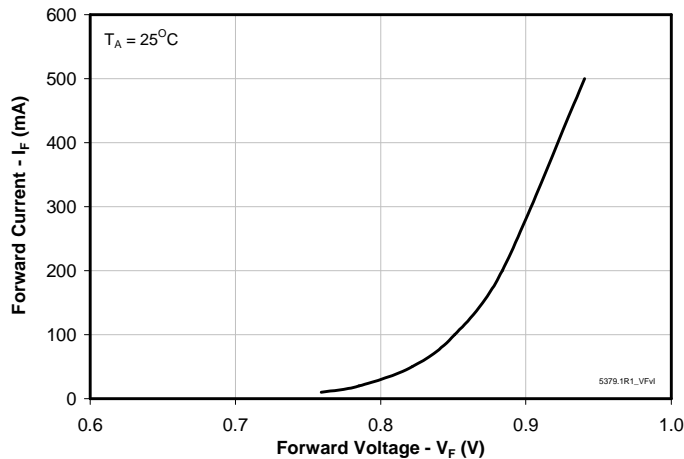
Clamping Voltage vs. Peak Pulse Current



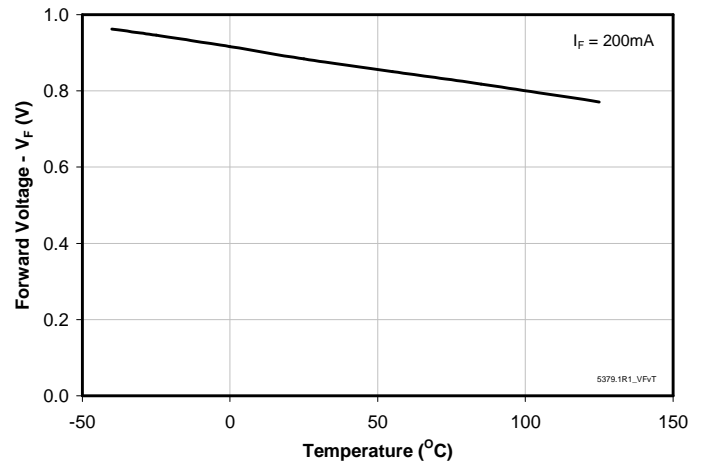
Junction Capacitance vs. Reverse Voltage



Forward Voltage vs. Forward Current



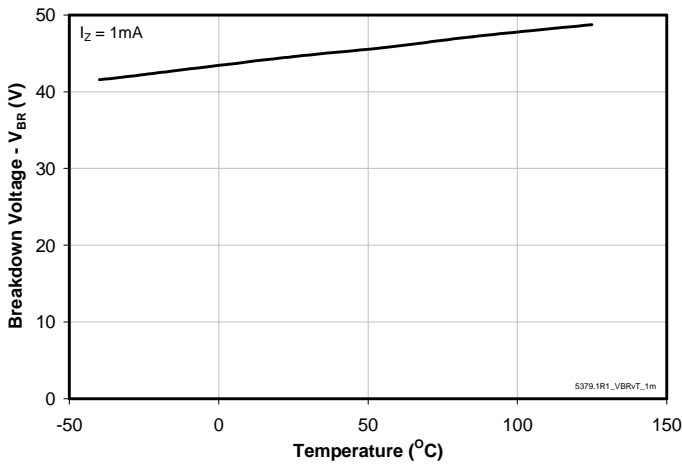
Forward Voltage vs. Temperature



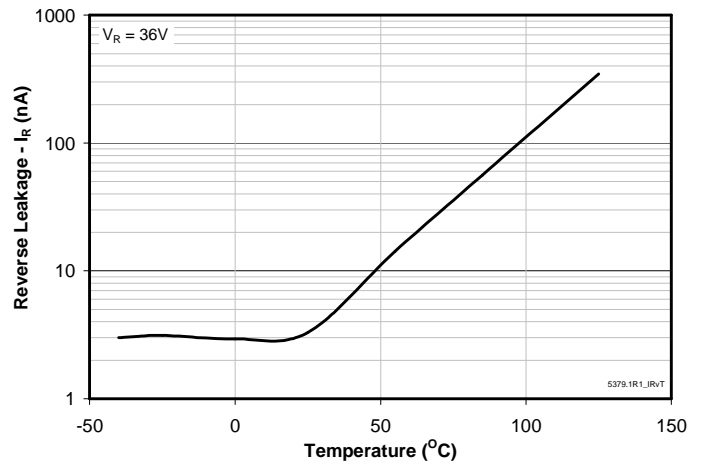
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Typical Characteristics

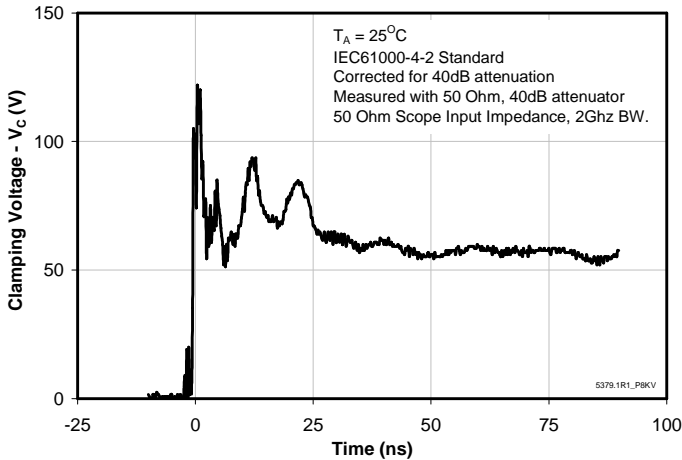
Breakdown Voltage vs Temperature



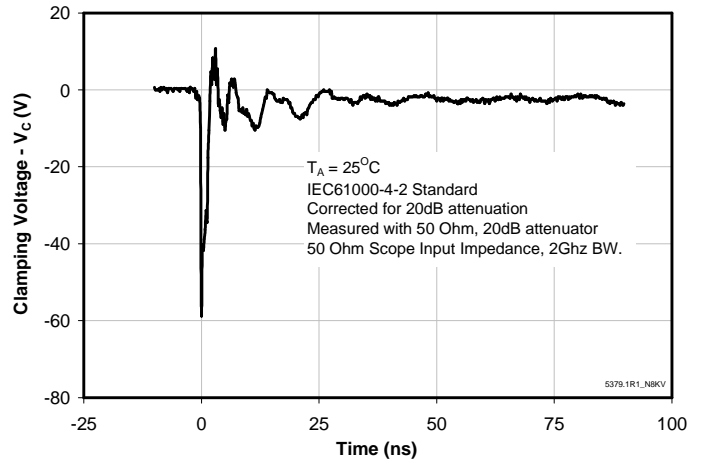
Reverse Leakage Current vs Temperature



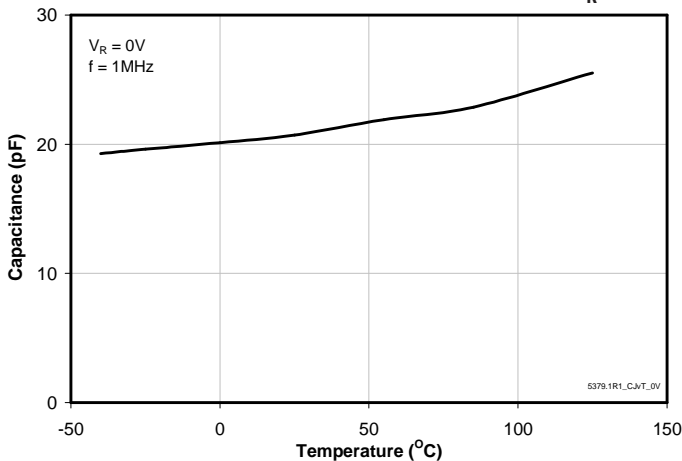
**Positive ESD Clamping
(8kV Contact per IEC 61000-4-2)**



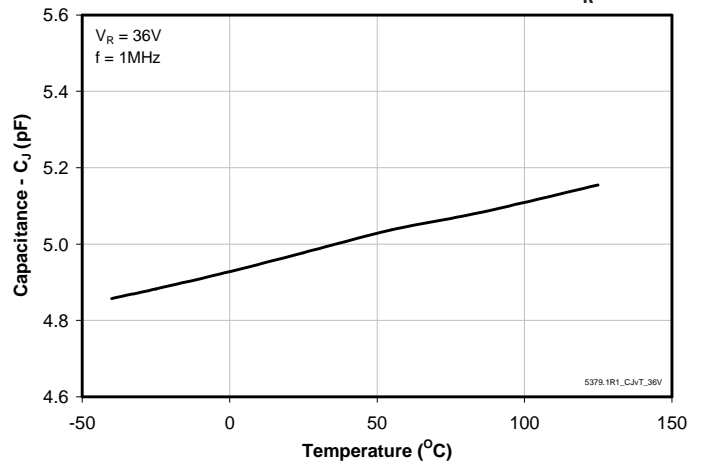
**Negative ESD Clamping
(8kV Contact per IEC 61000-4-2)**



Junction Capacitance vs. Temperature at $V_R = 0\text{V}$



Junction Capacitance vs. Temperature at $V_R = 36\text{V}$



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Applications Information

Device Connection for Protection of Two and Three Wire Proximity Switches

Digital sensors help to bridge the gap between the physical world and the digital world in applications such as computer controlled factory automation, automotive spark timing and throttle position sensing amongst others. In such environments, transient voltages can easily disrupt or damage sensitive sensor inputs. The uClamp3603T provides transient voltage protection for the digital sensors to ensure their operation is not disrupted by the physical world.

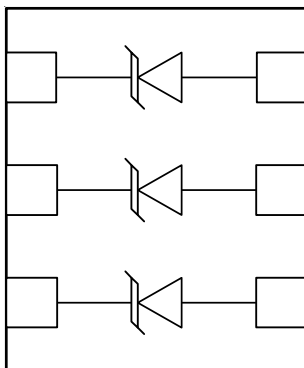
The uClamp3603T is designed to meet the high surge capability and low clamping voltage needed to protect the ASIC and control logic used in proximity switches. The uClamp3603T provides protection for the power and I/O lines. Typical configurations for the protection of two and three wire switches are illustrated:

Circuit Board Layout Recommendations for Suppression of ESD.

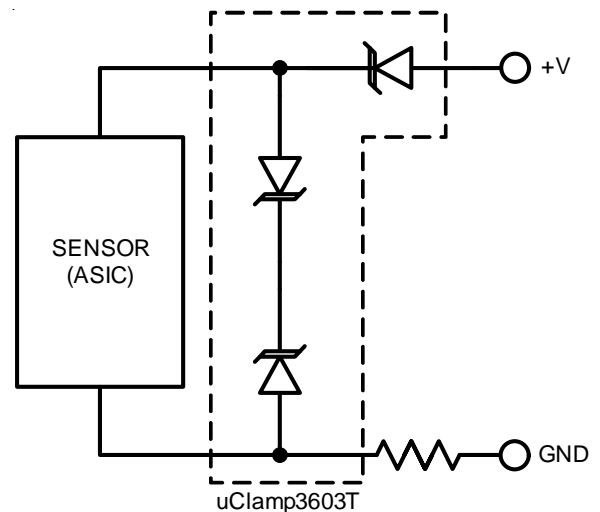
Good circuit board layout is critical for the suppression of ESD induced transients. The following guidelines are recommended:

- ◆ Place the TVS near the input terminals or connectors to restrict transient coupling.
- ◆ Minimize the path length between the TVS and the protected line.
- ◆ Minimize all conductive loops including power and ground loops.
- ◆ The ESD transient return path to ground should be kept as short as possible.
- ◆ Never run critical signals near board edges.
- ◆ Use ground planes whenever possible.

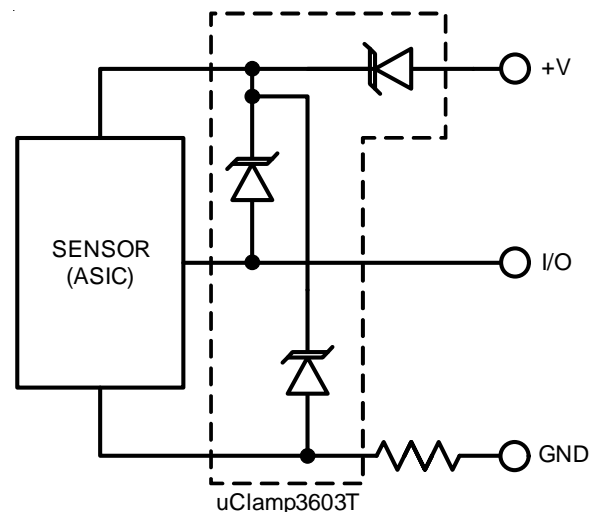
Equivalent Circuit Diagram



2-Wire DC Proximity Switch Application

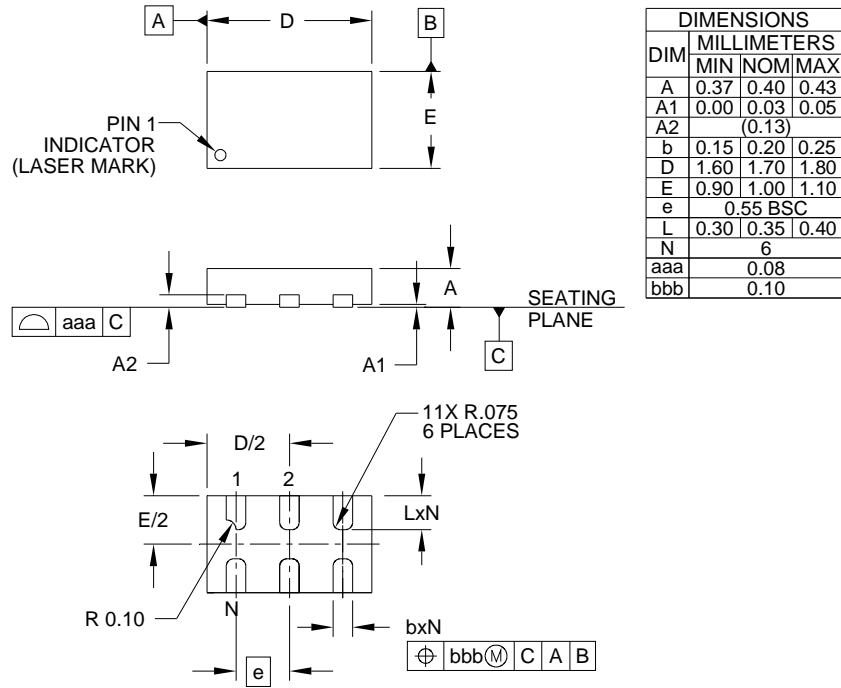


3-Wire DC Proximity Switch Application



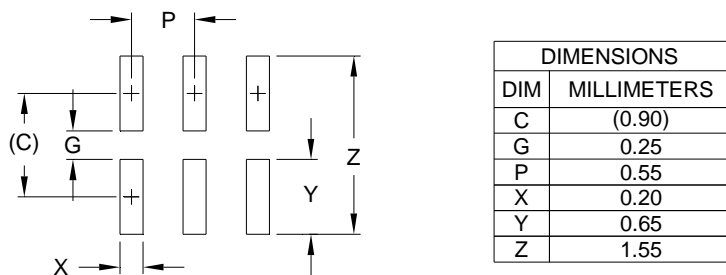
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Outline Drawing - SLP1710N6T



NOTES:
 1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).

Land Pattern - SLP1710N6T



NOTES:
 1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
 2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY.
 CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

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Marking



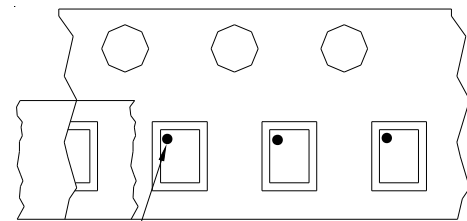
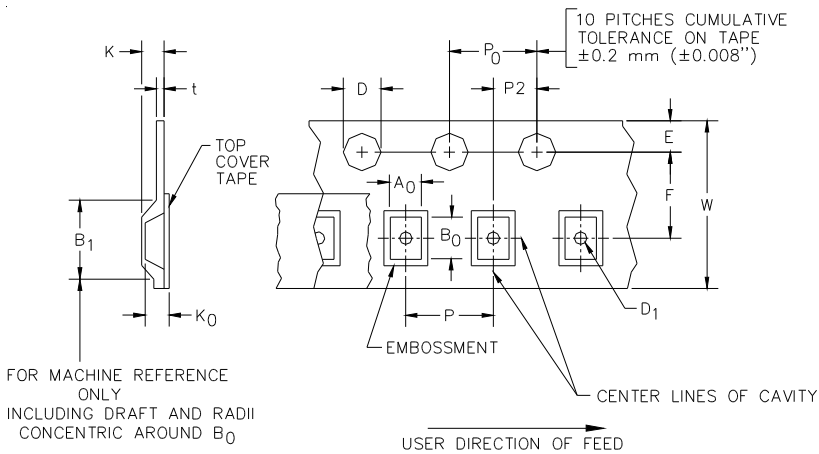
YYWW = Date Code

Ordering Information

Part Number	Working Voltage	Qty per Reel	Reel Size
uClamp3603T.TCT	36V	3,000	7 Inch

Note: Lead finish is lead-free NiPdAu.
MicroClamp and uClamp are marks of Semtech Corporation.

Tape and Reel Specification



Pin 1 Location

→ User Direction of feed

Device Orientation in Tape
Pin 1 in upper left towards sprocket holes

A0	B0	K0
1.18 +/-0.05 mm	1.88 +/-0.05 mm	0.53 +/-0.05 mm

Tape Width	B, (Max)	D	D1	E	F	K (MAX)	P	P0	P2	T(MAX)	W
8 mm	4.2 mm	1.5 + 0.1 mm - 0.0 mm)	0.5 mm ±0.05	1.750±.10 mm	3.5±0.05 mm	2.4 mm	4.0±0.1 mm	4.0±0.1 mm	2.0±0.05 mm	0.4 mm	8.0 mm + 0.3 mm - 0.1 mm

Contact Information

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