



## Si7900AEDN vs. Si7900EDN

**Description:** Dual N-Channel, 20-V (D-S) MOSFET with Common Drain  
**Package:** PowerPAK® 1212  
**Pin Out:** Identical

**Part Number Replacements:**

Si7900AEDN-T1 Replaces Si7900EDN-T1  
 Si7900AEDN-T1—E3 (Lead Free version) Replaces Si7900EDN-T1

**Summary of Performance:**

The Si7900AEDN is the replacement for the original Si7900EDN; both parts perform identically including limits to the parametric tables below.

<b>ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 °C UNLESS OTHERWISE NOTED)</b>				
Parameter	Symbol	Si7900AEDN	Si7900EDN	Unit
Drain-Source Voltage	V <sub>DS</sub>	20	20	V
Gate-Source Voltage	V <sub>GS</sub>	± 12	± 12	
Continuous Drain Current	T <sub>A</sub> = 25 °C	8.5	9	A
	T <sub>A</sub> = 85 °C	6.4	6.4	
Pulsed Drain Current	I <sub>DM</sub>	30	30	
Continuous Source Current (MOSFET Diode Conduction)	I <sub>S</sub>	2.9	2.9	
Power Dissipation	T <sub>A</sub> = 25 °C	2.9	3.2	W
	T <sub>A</sub> = 85 °C	3.1	1.7	
Operating Junction and Storage Temperature Range	T <sub>J</sub> and T <sub>stg</sub>	-55 to 150	-55 to 150	°C
Maximum Junction-to-Ambient	R <sub>thJA</sub>	40	38	°C/W

<b>SPECIFICATIONS (T<sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)</b>									
Parameter	Symbol	Si7900AEDN			Si7900EDN			Unit	
		Min	Typ	Max	Min	Typ	Max		
<b>Static</b>									
Gate-Threshold Voltage	V <sub>G(th)</sub>	0.4		0.9	0.4				V
Gate-Body Leakage	V <sub>GS</sub> = 12 V			± 1				± 1	µA
	V <sub>GS</sub> = 4.5 V			± 10				± 10	mA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>			1				1	µA
On-State Drain Current	V <sub>GS</sub> = 4.5 V	I <sub>D(on)</sub>	20		20				A
Drain-Source On-Resistance	V <sub>GS</sub> = 4.5 V	r <sub>DS(on)</sub>		0.020	0.026		0.020	0.026	Ω
	V <sub>GS</sub> = 2.5 V			0.022	0.030		0.025	0.031	
	V <sub>GS</sub> = 1.8 V			0.026	0.036		0.031	0.039	
Forward Transconductance		g <sub>fs</sub>		25			25		S
Diode Forward Voltage		V <sub>SD</sub>		0.65	1.1		0.65	1.1	V
<b>Dynamic</b>									
Total Gate Charge		Q <sub>g</sub>		10.5	16		12.5	18	nC
Gate-Source Charge		Q <sub>gs</sub>		1.9			2.7		
Gate-Drain Charge		Q <sub>gd</sub>		1.8			2.7		
<b>Switching</b>									
Turn-On Time		t <sub>d(on)</sub>		0.85	1.25		0.7	1.0	µs
		t <sub>r</sub>		1.3	2.0		1.3	2.0	
Turn-Off Time		t <sub>d(off)</sub>		8.6	13		5.5	8.0	
		t <sub>f</sub>		4.29	6.5		5.5	8.0	