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 (Pb)-free version) Replaces Si7900EDN-T1

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted					
Parameter		**Symbol**	**Si7900AEDN**	**Si7900EDN**	**Unit**
Drain-Source Voltage		V_{DS}	20	20	V
Gate-Source Voltage		V_{GS}	± 12	± 12	
Continuous Drain Current	T_A = 25 °C	I_D	8.5	9	A
	T_A = 85 °C		6.4	6.4	
Pulsed Drain Current		I_{DM}	30	30	
Continuous Source Current (MOSFET Diode Conduction)		I_S	2.9	2.9	
Power Dissipation	T_A = 25 °C	P_D	2.9	3.2	W
	T_A = 85 °C		3.1	1.7	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	40	38	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted									
Parameter		**Symbol**	**Si7900AEDN**			**Si7900EDN**			**Unit**
			Min	**Typ**	**Max**	**Min**	**Typ**	**Max**	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	0.4		0.9	0.4			V
Gate-Body Leakage	V_{GS} = 12 V	I_{GSS}			± 1			± 1	µA
	V_{GS} = 4.5 V				± 10			± 10	mA
Zero Gate Voltage Drain Current		I_{DSS}			1			1	µA
On-State Drain Current	V_{GS} = 4.5 V	$I_{D(on)}$	20			20			A
Drain-Source On-Resistance	V_{GS} = 4.5 V	$r_{DS(on)}$		0.020	0.026		0.020	0.026	Ω
	V_{GS} = 2.5 V			0.022	0.030		0.025	0.031	
	V_{GS} = 1.8 V			0.026	0.036		0.031	0.039	
Forward Transconductance		g_{fs}		25			25		S
Diode Forward Voltage		V_{SD}		0.65	1.1		0.65	1.1	V
Dynamic									
Total Gate Charge		Q_g		10.5	16		12.5	18	nC
Gate-Source Charge		Q_{gs}		1.9			2.7		
Gate-Drain Charge		Q_{gd}		1.8			2.7		
Switching									
Turn-On Time		$t_{d(on)}$		0.85	1.25		0.7	1.0	µs
		t_r		1.3	2.0		1.3	2.0	
Turn-Off Time		$t_{d(off)}$		8.6	13		5.5	8.0	
		t_f		4.29	6.5		5.5	8.0	

Specification comparisons are supplied as a courtesy to compare two devices and do not constitute a commercial product datasheet or any guarantee of identical performance. Designers should refer to the appropriate datasheets of the same number for guaranteed specification limits.