Si2302ADS vs. Si2302DS

Description: **N-Channel, 2.5 V (G-S) MOSFET**
Package: **SOT-23**
Pin Out: **Identical**

Part Number Replacements:
Si2302ADS-T1 Replaces Si2302DS-T1
Si2302ADS-T1-E3 (Lead (Pb)-free version) Replaces Si2302DS-T1

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted					
Parameter		**Symbol**	**Si2302ADS**	**Si2302DS**	**Unit**
Drain-Source Voltage		V_{DS}	20	20	V
Gate-Source Voltage		V_{GS}	± 8	± 8	
Continuous Drain Current	T_A = 25 °C	I_D	2.4	2.8	A
	T_A = 70 °C		1.9	2.2	
Pulsed Drain Current		I_{DM}	10	10	
Continuous Source Current (MOSFET Diode Conduction)		I_S	0.94	1.6	
Power Dissipation	T_A = 25 °C	P_D	0.9	1.25	W
	T_A = 70 °C		0.57	0.80	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	175	166	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted									
Parameter		**Symbol**	**Si2302ADS**			**Si2302DS**			**Unit**
			Min	**Typ**	**Max**	**Min**	**Typ**	**Max**	
Static									
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	20			20			V
Gate-Threshold Voltage		$V_{G(th)}$	0.65	0.95	1.2	0.65			
Gate-Body Leakage		I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current		I_{DSS}			1			1	µA
On-State Drain Current	V_{GS} = 4.5 V	$I_{D(on)}$	6			6			A
	V_{GS} = 2.5 V		4			4			
Drain-Source On-Resistance	V_{GS} = 4.5 V	$r_{DS(on)}$		0.045	0.060		0.07	0.085	Ω
	V_{GS} = 2.5 V			0.070	0.115		0.085	0.115	
Forward Transconductance		g_{fs}		8			10		S
Diode Forward Voltage		V_{SD}		0.76	1.2		0.76	1.2	V
Dynamic									
Total Gate Charge		Q_g		4.0	10		5.4	10	nC
Gate-Source Charge		Q_{gs}		0.65			0.65		
Gate-Drain Charge		Q_{gd}		1.5			1.60		
Input Capacitance		C_{iss}		300			340		pF
Output Capacitance		C_{oss}		120			115		
Reverse Transfer Capacitance		C_{rss}		80			33		
Switching									
Turn-On Time		$t_{d(on)}$		7	15		12	25	ns
		t_r		55	80		36	60	
Turn-Off Time		$t_{d(off)}$		16	60		34	60	
		t_f		10	25		10	25	

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.