Si2303BDS vs. Si2303DS

Description: **P-Channel, 30 V (D-S) MOSFET**
Package: **SOT-23**
Pin Out: **Identical**

Part Number Replacements:
Si2303BDS-T1 Replaces Si2303DS-T1
Si2303BDS-T1-E3 (Lead (Pb)-free version) Replaces Si2303DS-T1

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted					
Parameter		**Symbol**	**Si2303BDS**	**Si2303DS**	**Unit**
Drain-Source Voltage		V_{DS}	- 30	- 30	V
Gate-Source Voltage		V_{GS}	± 20	± 20	
Continuous Drain Current	T_A = 25 °C	I_D	- 1.64	- 1.7	A
	T_A = 70 °C		- 1.31	- 1.4	
Pulsed Drain Current		I_{DM}	- 10	- 10	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 0.75	- 1.25	
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**	**Si2303BDS**			**Si2303DS**			**Unit**
			Min	**Typ**	**Max**	**Min**	**Typ**	**Max**	
Static									
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	- 30			- 30			V
Gate-Threshold Voltage		$V_{G(th)}$	- 1.0		- 3.0	- 1.0			
Gate-Body Leakage		I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current		I_{DSS}			- 1			- 1	µA
On-State Drain Current	V_{GS} = - 10 V	$I_{D(on)}$	- 6			- 6			A
Drain-Source On-Resistance	V_{GS} = - 10 V	$r_{DS(on)}$		0.150	0.200		0.190	0.240	Ω
	V_{GS} = - 4.5 V			0.285	0.380		0.240	0.460	
Forward Transconductance		g_{fs}		2.0			2.4		S
Diode Forward Voltage		V_{SD}		- 0.85	- 1.2		- 0.8	- 1.2	V
Dynamic									
Total Gate Charge		Q_g		4.3	10		5.8	10	nC
Gate-Source Charge		Q_{gs}		0.8			0.8		
Gate-Drain Charge		Q_{gd}		1.3			1.5		
Input Capacitance		C_{iss}		180			226		pF
Output Capacitance		C_{oss}		50			87		
Reverse Transfer Capacitance		C_{rss}		35			19		
Switching									
Turn-On Time		$t_{d(on)}$		55	80		9	20	ns
		t_r		40	60		9	20	
Turn-Off Time		$t_{d(off)}$		10	20		18	35	
		t_f		10	20		6	20	

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.