Si2312CDS vs. Si2312BDS

Description: **N-Channel, 20 V (D-S) MOSFET**
Package: **SOT-23**
Pin Out: **Identical**

Part Number Replacements: Si2312CDS-T1-GE3 replaces Si2312BDS-T1-GE3
Si2312CDS-T1-GE3 replaces Si2312BDS-T1-GE3

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted

PARAMETER		SYMBOL	Si2312CDS	Si2312BDS	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	5.0	5.0	A
	T_A = 70 °C		4.0	4.0	
Pulsed Drain Current		I_{DM}	20	15	
Continuous Source Current (MOSFET Diode Conduction)		I_S	1.04	1.0	
Power Dissipation	T_A = 25 °C	P_D	1.25	1.25	W
	T_A = 70 °C		0.8	0.8	
Operating Junction and Storage Temperature Range		T_J and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	100	100	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted

PARAMETER		SYMBOL	Si2312CDS MIN.	Si2312CDS TYP.	Si2312CDS MAX.	Si2312BDS MIN.	Si2312BDS TYP.	Si2312BDS MAX.	UNIT
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	0.45		1.0	0.45		0.85	V
Gate-Body Leakage		I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current		I_{DSS}			1.0			1.0	µA
On-State Drain Current	V_{GS} = 4.5 V	$I_{D(on)}$	20			15			A
Drain-Source On-Resistance	V_{GS} = 4.5 V	$R_{DS(on)}$		0.0265	0.0318		0.0250	0.0310	Ω
	V_{GS} = 2.5 V			0.0296	0.0356		0.0300	0.0370	
	V_{GS} = 1.8 V			0.0345	0.0414		0.0360	0.0470	
Forward Transconductance		g_{fs}		24			30		S
Diode Forward Voltage		V_{SD}		0.75	1.2		0.8	1.2	V
Dynamic									
Total Gate Charge		Q_g		8.8	14		7.5	12	nC
Gate-Source Charge		Q_{gs}		1.1			1.4		
Gate-Drain Charge		Q_{gd}		0.7			1.2		
Gate Resistance		R_g	0.5	2.4	4.8	1.1	2.2	3.3	Ω

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.