Si2308BDS vs. Si2308DS

Description: **N-Channel, 60-V (D-S) MOSFET**
Package: **SOT-23**
Pin Out: **Identical**

Part Number Replacements: Si2308BDS-T1-GE3 replaces Si2308DS-T1-GE3
Si2308BDS-T1-E3 or Si2308BDS-T1-GE3 replaces Si2308DS-T1-E3
Si2308BDS-T1-E3 or Si2308BDS-T1-GE3 replaces Si2308DS-T1

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

PARAMETER		SYMBOL	Si2308BDS	Si2308DS	UNIT
Drain-Source Voltage		V_{DS}	60	60	V
Gate-Source Voltage		V_{GS}	± 20	± 20	
Continuous Drain Current	T_A = 25 °C	I_D	1.9	2.0	A
	T_A = 70 °C		1.5	1.6	
Pulsed Drain Current		I_{DM}	8	10	
Continuous Source Current (MOSFET Diode Conduction)		I_S	0.91	1.0	
Power Dissipation	T_A = 25 °C	P_D	1.09	1.25	W
	T_A = 70 °C		0.7	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}	115	100	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted

PARAMETER		SYMBOL	Si2308BDS MIN.	Si2308BDS TYP.	Si2308BDS MAX.	Si2308DS MIN.	Si2308DS TYP.	Si2308DS MAX.	UNIT
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	1.0		3.0	1.5		3.0	V
Gate-Body Leakage		I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current		I_{DSS}			1.0			0.5	µA
On-State Drain Current	V_{GS} = 10 V	$I_{D(on)}$	8			6			A
	V_{GS} = 4.5 V		NS			4			
Drain-Source On-Resistance	V_{GS} = 10 V	$R_{DS(on)}$		0.130	0.156		0.125	0.160	Ω
	V_{GS} = 4.5 V			0.160	0.192		0.155	0.220	
Forward Transconductance		g_{fs}		5			4.6		S
Diode Forward Voltage		V_{SD}		0.8	1.2		0.77	1.2	V
Dynamic									
Input Capacitance		C_{iss}		190			240		pF
Output Capacitance		C_{oss}		26			50		
Reverse Transfer Capacitance		C_{rss}		15			15		
Total Gate Charge		Q_g		4.5	6.8		4.8	10	
Gate-Source Charge		Q_{gs}		0.8			0.8		
Gate-Drain Charge		Q_{gd}		1.0			1.0		
Gate Resistance		R_g	0.6	2.8	5.6	0.5	NS	3.3	Ω
Switching									
Turn-On-Time		$t_{d(on)}$		15	23		7	15	ns
		t_r		16	24		10	20	
Turn-Off-Time		$t_{d(off)}$		11	17		17	35	
		t_f		11	17		6	15	

Note
NS denotes not specified in original specification

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.