



Si2315BDS vs. Si2315DS

Description: P-Channel, 1.8 V (G-S) MOSFET

Package: SOT-23

Pin Out: Identical

Part Number Replacements:

Si2315BDS-T1 Replaces Si2315DS-T1

Si2315BDS-T1-E3 (Lead (Pb)-free version) Replaces Si2315DS-T1

ABSOLUTE MAXIMUM RATINGS $T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted				
Parameter	Symbol	Si2315BDS	Si2315DS	Unit
Drain-Source Voltage	V_{DS}	- 12	- 12	V
Gate-Source Voltage	V_{GS}	± 8	± 8	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	- 3.85	A
	$T_A = 70\text{ }^\circ\text{C}$		- 3.0	
Pulsed Drain Current	I_{DM}	- 12	- 12	
Continuous Source Current (MOSFET Diode Conduction)	I_S	- 1.0	- 1.6	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	1.19	W
	$T_A = 70\text{ }^\circ\text{C}$		0.76	
Operating Junction and Storage Temperature Range	T_j and T_{stg}	- 55 to 150	- 55 to 150	$^\circ\text{C}$
Maximum Junction-to-Ambient	R_{thJA}	105	100	$^\circ\text{C/W}$

SPECIFICATIONS $T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted								
Parameter	Symbol	Si2315BDS			Si2315DS			Unit
		Min	Typ	Max	Min	Typ	Max	
Static								
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	- 12			- 12			V
Gate-Threshold Voltage	$V_{G(th)}$	- 0.45		- 0.90	- 0.45			
Gate-Body Leakage	I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}			- 1			- 1	μA
On-State Drain Current	$V_{GS} = - 4.5\text{ V}$	$I_{D(on)}$	- 6		- 6			A
	$V_{GS} = - 2.5\text{ V}$		- 3		- 3			
Drain-Source On-Resistance	$V_{GS} = - 4.5\text{ V}$	$r_{DS(on)}$	0.040	0.050	0.045	0.055	Ω	
	$V_{GS} = - 2.5\text{ V}$		0.050	0.065	0.063	0.075		
	$V_{GS} = - 1.8\text{ V}$		0.071	0.100	0.093	0.118		
Forward Transconductance	g_{fs}		7			7		S
Diode Forward Voltage	V_{SD}			- 1.2			- 1.2	V
Dynamic								
Total Gate Charge	Q_g		8	15		9	15	nC
Gate-Source Charge	Q_{gs}		1.1			1.9		
Gate-Drain Charge	Q_{gd}		2.3			1.5		
Input Capacitance	C_{iss}		715			1225		pF
Output Capacitance	C_{oss}		275			260		
Reverse Transfer Capacitance	C_{rss}		200			130		
Switching								
Turn-On Time	$t_{d(on)}$		15	20		13	20	ns
	t_r		35	50		15	25	
Turn-Off Time	$t_{d(off)}$		50	70		50	70	
	t_f		50	75		19	35	

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.