



Si2307BDS vs. Si2307DS

Description: P-Channel, 30 V (D-S) MOSFET

Package: SOT-23

Pin Out: Identical

Part Number Replacements:

Si2307BDS-T1-E3 Replaces Si2307DS-T1-E3

Si2307BDS-T1-E3 Replaces Si2307DS-T1

ABSOLUTE MAXIMUM RATINGS $T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted				
Parameter	Symbol	Si2307BDS	Si2307DS	Unit
Drain-Source Voltage	V_{DS}	- 30	- 30	V
Gate-Source Voltage	V_{GS}	± 20	± 20	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	- 3.2	A
	$T_A = 70\text{ }^\circ\text{C}$		- 2.6	
Pulsed Drain Current	I_{DM}	- 12	- 12	
Continuous Source Current (MOSFET Diode Conduction)	I_S	- 1.25	- 1.25	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	1.25	W
	$T_A = 70\text{ }^\circ\text{C}$		0.8	
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}	100	100	$^\circ\text{C/W}$

SPECIFICATIONS $T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted								
Parameter	Symbol	Si2307BDS			Si2307DS			Unit
		Min	Typ	Max	Min	Typ	Max	
Static								
Gate-Threshold Voltage	$V_{G(th)}$	- 1.0		- 3.0	- 1.0		NS	V
Gate-Body Leakage	I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}			- 1			- 1	μA
On-State Drain Current	$V_{GS} = - 10\text{ V}$	$I_{D(on)}$	- 6		- 6			A
Drain-Source On-Resistance	$V_{GS} = - 10\text{ V}$	$r_{DS(on)}$	0.063	0.078		0.064	0.080	Ω
	$V_{GS} = - 4.5\text{ V}$		0.105	0.130		0.103	0.140	
Forward Transconductance		g_{fs}	5.0			4.5		S
Diode Forward Voltage	V_{SD}		- 0.85	- 1.2			- 1.2	V
Dynamic								
Total Gate Charge	Q_g		9	15		10	15	nC
Gate-Source Charge	Q_{gs}		1.4			1.9		
Gate-Drain Charge	Q_{gd}		2.4			2		
Gate Resistance	R_g		8			NS		Ω
Switching^a								
Turn-On Time	$t_{d(on)}$		9	20		10	20	ns
	t_r		12	20		9	20	
Turn-Off Time	$t_{d(off)}$		25	40		27	50	
	t_f		15	21		7	16	

NS denotes not specified in original datasheet.

Notes:

a. $V_{GEN} = - 10\text{ V}$ for Si2307DS and $- 4.5\text{ V}$ for Si2307BDS.

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.