Si2333DS vs. Si2331DS

Description: **P-Channel, 12 V (D-S) MOSFET**
Package: **SOT-23**
Pin Out: **Identical**

Part Number Replacements

Si2333DS-T1-E3 Replaces Si2331DS-T1-E3
Si2333DS-T1 Replaces Si2331DS-T1

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

Parameter		Symbol	Si2333DS	Si2331DS	Unit
Drain-Source Voltage		V_{DS}	- 12	- 12	V
Gate-Source Voltage		V_{GS}	± 8	± 8	
Continuous Drain Current	T_A = 25 °C	I_D	- 5.3	- 3.6	A
	T_A = 70 °C		- 4.2	- 2.9	
Pulsed Drain Current		I_{DM}	- 20	- 12	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 1.0	- 0.74	
Power Dissipation	T_A = 25 °C	P_D	1.25	0.89	W
	T_A = 70 °C		0.8	0.57	
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	140	°C/W

SPECIFICATIONS (T_J = 25 °C, unless otherwise noted)

Parameter		Symbol	Si2333DS			Si2331DS			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	- 0.40		- 1.0	- 0.45		- 0.90	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} = 4.5 V	$I_{D(on)}$	- 20			- 6			A
Drain-Source On-Resistance	V_{GS} = - 4.5 V	$r_{DS(on)}$		0.025	0.032		0.038	0.048	Ω
	V_{GS} = - 2.5 V			0.033	0.042		0.049	0.062	
	V_{GS} = - 1.8V			0.046	0.059		0.070	0.090	
Forward Transconductance		g_{fs}		17			3		S
Diode Forward Voltage		V_{SD}		- 0.7	- 1.2		NS	- 1.2	V
Dynamic									
Total Charge		Q_g		11.5	18		9	14	nC
Gate-Source Charge		Q_{gs}		1.5			1.3		
Gate-Drain Charge		Q_{gd}		3.2			2.5		
Switching									
Turn-On Time		$t_{d(on)}$		25	40		20	30	ns
		t_r		45	70		35	55	
Turn-Off Time		$t_{d(off)}$		72	110		65	100	
		t_r		60	90		50	75	

NS denotes parameter not specified in original datasheet

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.