Si9933BDY vs. Si9933ADY

Description: Dual P-Channel, 20 V (D-S) MOSFET
Package: SO-8
Pin Out: Identical

Part Number Replacements:
Si9933BDY-T1-E3 Replaces Si9933ADY-T1-E3
Si9933BDY-T1 Replaces Si9933ADY-T1

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted					
Parameter		**Symbol**	**Si9933BDY**	**Si9933ADY**	**Unit**
Drain-Source Voltage		V_{DS}	- 20	- 20	V
Gate-Source Voltage		V_{GS}	± 12	± 12	
Continuous Drain Current	T_A = 25 °C	I_D	- 4.7	- 3.4	A
	T_A = 70 °C		- 3.8	- 2.7	
Pulsed Drain Current		I_{DM}	- 20	- 16	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 1.7	- 2.0	
Power Dissipation	T_A = 25 °C	P_D	2.0	2.0	W
	T_A = 70 °C		1.3	1.3	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	62.5	62.5	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted									
Parameter		**Symbol**	**Si9933BDY**			**Si9933ADY**			**Unit**
			Min	**Typ**	**Max**	**Min**	**Typ**	**Max**	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	- 0.6		- 1.4	- 0.8		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} = - 4.5 V	$I_{D(on)}$	- 20			- 16			A
	V_{GS} = - 2.7 V		NS			- 3			
Drain-Source On-Resistance	V_{GS} = - 4.5 V	$r_{DS(on)}$		0.048	0.060		0.060	0.075	Ω
	V_{GS} = - 3.0 V			NS	NS		0.078	0.105	
	V_{GS} = - 2.7 V			0.080[a]	0.100[a]		0.085	0.115	
Forward Transconductance		g_{fs}		11			8		S
Diode Forward Voltage		V_{SD}		- 0.75	- 1.2		- 0.7	- 1.2	V
Dynamic									
Total Gate Charge		Q_g		6	9		10	20	nC
Gate-Source Charge		Q_{gs}		1.4			2.1		
Gate-Drain Charge		Q_{gd}		1.9			3.3		
Gate Resistance		R_g		9.5			NS		Ω
Switching									
Turn-On Time		$t_{d(on)}$		22	35		16	40	ns
		t_r		35	55		46	80	
Turn-Off Time		$t_{d(off)}$		45	70		40	70	
		t_f		25	40		25	40	
Source-Drain Reverse Recovery Time		t_{rr}		25	50		60	100	

NS denotes not specified in original datasheet.
Notes:
a. V_{GS} = 2.5 V.

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.