Si4914BDY vs. Si4914DY

Description: **Dual N-Channel, 30-V (D-S) MOSFET with Schottky Diode**
Package: **SO-8**
Pin Out: **Identical**

Part Number Replacements: Si4914BDY-T1-E3 replaces Si4914DY-T1-E3

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

PARAMETER		SYMBOL	Si4914BDY		Si4914DY		UNIT
			CH-1	CH-2	CH-1	CH-2	
Drain-Source Voltage		V_{DS}	30		30		V
Gate-Source Voltage		V_{GS}	± 20		± 20		V
Continuous Drain Current	T_A = 25 °C	I_D	6.7	7.4	7.0	7.4	A
	T_A = 70 °C		5.3	5.7	5.6	6	A
Pulsed Drain Current		I_{DM}	40	40	40	40	A
Continuous Source Current (MOSFET Diode Conduction)		I_S	1.0	1.1	1.7	1.8	A
Power Dissipation	T_A = 25 °C	P_D	1.7	2.0	1.9	2.0	W
	T_A = 70 °C		1.1	1.2	1.2	1.3	W
Operating Junction and Storage Temperature Range		T_J and T_{stg}	- 55 to 150		- 55 to 150		°C
Maximum Junction-to-Ambient		R_{thJA}	70	62.5	65	60	°C/W

MOSFET SPECIFICATIONS T_J = 25 °C, unless otherwise noted

PARAMETER		SYMBOL		Si4914BDY			Si4914DY			UNIT
				MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Static										
Gate-Threshold Voltage		$V_{GS(th)}$	Ch-1	1.2		2.7	1		2.5	V
			Ch-2	1.2		2.7	1		2.5	V
Gate-Body Leakage		I_{GSS}	Ch-1			100			100	nA
			Ch-2			100			100	nA
Zero Gate Voltage Drain Current		I_{DSS}	Ch-1			1			1	µA
			Ch-2			100			500	µA
On-State Drain Current	V_{GS} = 10 V	$I_{D(on)}$	Ch-1	20			20			A
			Ch-2	20			20			A
Drain-Source On-Resistance	V_{GS} = 10 V	$r_{DS(on)}$	Ch-1		0.0165	0.021		0.019	0.023	Ω
			Ch-2		0.0155	0.020		0.016	0.020	Ω
	V_{GS} = 4.5 V		Ch-1		0.0215	0.027		0.026	0.032	Ω
			Ch-2		0.020	0.025		0.022	0.027	Ω
Forward Transconductance		g_{fs}	Ch-1		29			19		S
			Ch-2		33			22		S
Diode Forward Voltage		V_{SD}	Ch-1		0.77	1.1		0.75	1.1	V
			Ch-2		0.46	0.5		0.36	0.40	V
Dynamic										
Total Gate Charge		Q_g	Ch-1		6.7	10.5		5.6	8.5	nC
			Ch-2		7.0	11.0		7.3	11	nC
Gate-Source Charge		Q_{gs}	Ch-1		2.8			2.3		nC
			Ch-2		2.8			2.8		nC
Gate-Drain Charge		Q_{gd}	Ch-1		2.0			1.7		nC
			Ch-2		2.0			2.2		nC
Gate Resistance		R_g	Ch-1		2.9	6.0	0.5	2.3	3.6	Ω
			Ch-2		2.0	4.0	0.5	1.6	2.5	Ω

SCHOTTKY SPECIFICATIONS T_J = 25 °C, unless otherwise noted									
PARAMETER		**SYMBOL**	**Si4914BDY**			**Si4914DY**			**UNIT**
			MIN.	**TYP.**	**MAX.**	**MIN.**	**TYP.**	**MAX.**	
Static									
Forward Voltage Drop	T_J = 25 °C	V_F					0.36	0.40	nC
	T_J = 150 °C						0.27	0.31	
Maximum Reverse Leakage Current	T_J = 25 °C	I_{rm}					0.008	0.50	mA
	T_J = 100 °C						3.5	10	
	T_J = 125 °C						10	100	
Junction Capacitance		C_T					58		pF

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.