Si4866BDY vs. Si4866DY

Description: **N-Channel, 12-V (D-S) MOSFET**
Package: **SO-8**
Pin Out: **Identical**

Part Number Replacements

Si4866BDY-T1-E3 Replaces Si4866DY-T1-E3
Si4866BDY-T1-E3 Replaces Si4866DY-T1

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C, unless otherwise noted)					
Parameter		**Symbol**	**Si4866BDY**	**Si4866DY**	**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	16.1	17	A
	T_A = 70 °C		12.9	14	
Pulsed Drain Current		I_{DM}	50	50	
Continuous Source Current (MOSFET Diode Conduction)	T_C = 25 °C	I_S	2.3	2.7	
Power Dissipation	T_A = 25 °C	P_D	2.5	3.0	W
	T_A = 70 °C		1.6	2.0	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	50	41	°C/W

SPECIFICATIONS (T_J = 25 °C, unless otherwise noted)									
Parameter		**Symbol**	**Si4866BDY**			**Si4866DY**			**Unit**
			Min	**Typ**	**Max**	**Min**	**Typ**	**Max**	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	0.4		1.0	0.6		NS[a]	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			40			A
Drain-Source On-Resistance	V_{GS} = 4.5 V	$r_{DS(on)}$		0.0042	0.0053		0.0045	0.0055	Ω
	V_{GS} = 2.5 V			0.0048	0.0060		0.0065	0.008	
	V_{GS} = 1.8 V			0.006	0.0074		NS[a]	NS[a]	
Forward Transconductance		g_{fs}		80			80		S
Diode Forward Voltage		V_{SD}		0.62	1.1		0.7	1.1	V
Dynamic									
Total Gate Charge		Q_g		52	80		21	30	nC
Gate-Source Charge		Q_{gs}		6.2			4.6		
Gate-Drain Charge		Q_{gd}		8.9			3.5		
Gate Resistance		R_g		0.8	1.3	1.5	2.3	3.9	Ω

Notes:
a. NS denotes 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.