Si4800BDY vs. Si4800DY

Description: N-Channel, Reduced Q_g, Fast Switching MOSFET
Package: SOIC-8
Pin Out: Identical

Part Number Replacements:

Si4800BDY Replaces Si4800DY
Si4800BDY-E3 (Lead (Pb)-free version) Replaces Si4800DY
Si4800BDY-T1 Replaces Si4800DY-T1
Si4800BDY-T1-E3 (Lead (Pb)-free version) Replaces Si4800DY-T1

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

Parameter		Symbol	Si4800BDY	Si4800DY	Unit
Drain-Source Voltage		V_{DS}	30	30	V
Gate-Source Voltage		V_{GS}	± 20	± 25	
Continuous Drain Current	T_A = 25 °C	I_D	9	9	A
	T_A = 70 °C		7	7	
Pulsed Drain Current		I_{DM}	40	40	
Continuous Source Current (MOSFET Diode Conduction)		I_S	2.3	2.3	
Power Dissipation	T_A = 25 °C	P_D	2.5	2.5	W
	T_A = 70 °C		1.6	1.6	
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	50	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted

Parameter		Symbol	Si4800BDY			Si4800DY			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{G(th)}$	0.8		1.8	0.8			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 V	$I_{D(on)}$	30			30			A
Drain-Source On-Resistance	V_{GS} = 10 V	$r_{DS(on)}$		0.0155	0.0185		0.0155	0.0185	Ω
	V_{GS} = 4.5 V			0.023	0.030		0.0275	0.033	
Forward Transconductance		g_{fs}		16			16		S
Diode Forward Voltage		V_{SD}		0.75	1.2		0.71	1.2	V
Dynamic									
Total Gate Charge		Q_g		8.7	13		8.7	13	nC
Gate-Source Charge		Q_{gs}		1.5			2.25		
Gate-Drain Charge		Q_{gd}		3.5			4.2		
Gate Resistance		R_g	0.5	1.2	2.0		NS		Ω
Switching									
Turn-On Time		$t_{d(on)}$		7	15		11	16	ns
		t_r		12	20		8	15	
Turn-Off Time		$t_{d(off)}$		32	50		22	30	
		t_f		14	25		9	15	
Source-Drain Reverse Recovery Time		t_{rr}		30	60		50	80	

NS denotes parameter not specified in original data sheet.

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.