Si4840BDY vs. Si4840DY

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

Part Number Replacements: Si4840BDY-T1-E3 replaces Si4840DY-T1-E3
Si4840BDY-T1-E3 replaces Si4840DY-T1

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted					
PARAMETER		**SYMBOL**	**Si4840BDY**	**Si4840DY**	**UNIT**
Drain-Source Voltage		V_{DS}	40	40	V
Gate-Source Voltage		V_{GS}	± 20	± 20	
Continuous Drain Current	T_A = 25 °C	I_D	12.4	14	A
	T_A = 70 °C		9.9	11	
Pulsed Drain Current		I_{DM}	50	50	
Continuous Source Current (MOSFET Diode Conduction)		I_S	2.1	2.3	
Power Dissipation	T_A = 25 °C	P_D	2.5	3.1	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	40	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted									
PARAMETER		**SYMBOL**	**Si4840BDY**			**Si4840DY**			**UNIT**
			MIN.	**TYP.**	**MAX.**	**MIN.**	**TYP.**	**MAX.**	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	1.0		3.0	1.0		3.0	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[a]	$I_{D(on)}$	50			50			A
Drain-Source On-Resistance	V_{GS} = 10 V	$r_{DS(on)}$		0.0074	0.009		0.0075	0.009	Ω
	V_{GS} = 4.5 V			0.0095	0.012		0.0095	0.0012	
Forward Transconductance		g_{fs}		56			50		S
Diode Forward Voltage		V_{SD}		0.8	1.2		0.75	1.1	V
Dynamic									
Total Gate Charge[a]		Q_g		15	23		18.5	28	nC
Gate-Source Charge		Q_{gs}		6.7			6		
Gate-Drain Charge		Q_{gd}		5.1			7.5		
Gate Resistance		R_g		1.4	2.1	0.2	0.8	1.2	Ω

Note

a. V_{GS} = 4.5 V for the Si4840BDY; V_{GS} = 5 V for the Si4840DY

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.