Si4842BDY vs. Si4842DY

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

Part Number Replacements:

Si4842BDY-T1-E3 Replaces Si4842DY-T1-E3
Si4842BDY-T1-E3 Replaces Si4842DY-T1

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C, unless otherwise noted)					
Parameter		**Symbol**	**Si4842BDY**	**Si4842DY**	**Unit**
Drain-Source Voltage		V_{DS}	30	30	V
Gate-Source Voltage		V_{GS}	± 20	± 20	
Continuous Drain Current	T_A = 25°C	I_D	20	23	A
	T_A = 70°C		16	19	
Pulsed Drain Current		I_{DM}	60	60	
Continuous Source Current (MOSFET Diode Conduction)		I_S	2.7	2.9	
Power Dissipation	T_A = 25°C	P_D	3.0	3.5	W
	T_A = 70°C		1.9	2.2	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	42	35	°C/W

SPECIFICATIONS (T_J = 25 °C, unless otherwise noted)									
Parameter		**Symbol**	**Si4842BDY**			**Si4842DY**			**Unit**
			Min	**Typ**	**Max**	**Min**	**Typ**	**Max**	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	1.4		3.0	1		3	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	$r_{DS(on)}$		0.0034	0.0042		0.0037	0.0045	Ω
	V_{GS} = 4.5 V			0.0047	0.0057		0.0048	0.006	
Forward Transconductance		g_{fs}		90			80		S
Diode Forward Voltage		V_{SD}		0.74	1.1		0.75	1.1	V
Dynamic									
Total Gate Charge		Q_g		29	43		25	35	nC
Gate-Source Charge		Q_{gs}		12.6			6.7		
Gate-Drain Charge		Q_{gd}		9.4			9.7		
Gate Resistance		R_g	NS	1.25	2	1.0	1.9	2.3	Ω
Switching									
Turn-On Time*		$t_{d(on)}$		15	25		17	30	ns
		t_r		15	25		10	20	
Turn-Off Time*		$t_{d(off)}$		42	65		65	130	
		t_f		8	15		35	60	
Source-Drain Reverse Recovery Time		t_{rr}		34	55		50	80	

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.