



Si4874BDY vs. Si4874DY

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

Part Number Replacements:

Si4874BDY-T1-E3 Replaces Si4874DY-T1-E3

Si4874BDY-T1-E3 Replaces Si4874DY-T1

Summary of Performance:

The Si4874BDY is the replacement to the original Si4874DY; both parts perform identically, including limits to the parametric tables below.

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	Si4874BDY	Si4874DY	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	16	15	A
	T _A = 70°C		13	13	
Pulsed Drain Current		I _{DM}	50	50	
Continuous Source Current (MOSFET Diode Conduction)		I _S	2.7	2.3	
Power Dissipation	T _A = 25°C	P _D	3.0	3.1	W
	T _A = 70°C		2.0	2.0	
Operating Junction & Storage Temperature Range		T _J & T _{stg}	-55 to 150	-55 to 150	°C
Maximum Junction-to-Ambient		R _{thJA}	41	40	°C/W

SPECIFICATIONS (T _J = 25°C UNLESS OTHERWISE NOTED)									
Parameter		Symbol	Si4874BDY			Si4874DY			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		V _{GS(th)}	1.0		3.0	1.0		NS	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			40			A
Drain-Source On-Resistance	V _{GS} = 10 V	r _{DS(on)}		0.0057	0.007		0.0062	0.0075	Ω
	V _{GS} = 4.5 V			0.0068	0.0085		0.0083	0.010	
Forward Transconductance		g _{fs}		65			40		S
Diode Forward Voltage		V _{SD}		0.74	1.1		0.73	1.1	V
Dynamic									
Total Charge*		Q _g		21	25		35	45	nC
Gate-Source Charge		Q _{gs}		9.5			12.2		
Gate-Drain Charge		Q _{gd}		6.5			11.4		
Gate Resistance		R _g	0.4	0.9	1.4		NS		
Switching									
Turn-On Time*	t _{d(on)}			16	25		20	30	ns
	t _r			10	20		16	25	
Turn-Off Time*	t _{d(off)}			57	90		120	180	
	t _f			15	25		43	65	
Source-Drain Reverse Recovery Time		t _{rr}		40	60		50	80	

NS denotes not specified in original datasheet

* V_{GS} = 5.0 V for the Si4874DY and 4.5 V for the Si4874BDY