



Si4810BDY vs. Si4810DY

Description: N-Channel, 30-V (D-S) MOSFET with Schottky Diode
Package: SOIC-8
Pin Out: Identical

Part Number Replacements:

Si4810BDY Replaces Si4810DY
Si4810BDY—E3 (Lead Free version) Replaces Si4810DY
Si4810BDY-T1 Replaces Si4810DY-T1
Si4810BDY-T1—E3 (Lead Free version) Replaces Si4810DY-T1

Summary of Performance:

The Si4810BDY is the replacement for the original Si4810DY; both parts perform identically including limits to the parametric tables below.

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)				
Parameter	Symbol	Si4810BDY	Si4810DY	Unit
Drain-Source Voltage (MOSFET)	V_{DS}	30	30	V
Reverse Voltage (Schottky)		30	30	
Gate-Source Voltage	V_{GS}	± 20	± 20	
Continuous Drain Current	$T_A = 25^\circ\text{C}$	10	10	A
	$T_A = 70^\circ\text{C}$	8	8	
Pulsed Drain Current	I_{DM}	50	50	
Continuous Source Current (MOSFET Diode Conduction)	I_S	2.3	2.3	
Average Forward Current (Schottky)	I_F	3.8	4.0	
Pulse Forward Current (Schottky)	I_{FM}	40	50	
Power Dissipation (MOSFET)	$T_A = 25^\circ\text{C}$	2.5	2.5	W
	$T_A = 70^\circ\text{C}$	1.6	1.3	
Power Dissipation (Schottky)	$T_A = 25^\circ\text{C}$	2.0	2.0	
	$T_A = 70^\circ\text{C}$	2.3	1.3	
Operating Junction and Storage Temperature Range	T_J and T_{stg}	-55 to 150	-55 to 150	$^\circ\text{C}$
Maximum Junction-to-Ambient (MOSFET)	R_{thJA}	50	50	$^\circ\text{C/W}$
Maximum Junction-to-Ambient (Schottky)		60	60	

SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)									
Parameter		Symbol	Si4810BDY			Si4810DY			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Drain-Source Breakdown Voltage		V _{(BR)DSS}	30			30			V
Gate-Threshold Voltage		V _{G(th)}	1.0		3.0	1.0			
Gate-Body Leakage		I _{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current	T _J = 25 °C	I _{DSS}		0.007	0.100		0.007	0.100	mA
	T _J = 100 °C			1.5	10		1.5	10	
	T _J = 125 °C			6.5	20		6.5	20	
On-State Drain Current	V _{GS} = 10 V	I _{D(on)}	20			20			A
Drain-Source On-Resistance	V _{GS} = 10 V	r _{Ds(on)}		0.0105	0.0135		0.0105	0.0135	Ω
	V _{GS} = 4.5 V			0.016	0.020		0.0155	0.020	
Forward Transconductance		g _{fs}		25			28		S
Diode Forward Voltage (Schottky)	T _J = 25 °C	V _{SD}		0.485	0.53		0.485	0.53	V
	T _J = 125 °C			0.420	0.47		0.420	0.47	

Specification Comparison

Vishay Siliconix



SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)								
Parameter	Symbol	Si4810BDY			Si4810DY			Unit
		Min	Typ	Max	Min	Typ	Max	
Dynamic								
Total Gate Charge	Qg		14.5			20	30	nC
Gate-Source Charge	Qgs		6.3			8		
Gate-Drain Charge	Qgd		4.7			7		
Gate Resistance	Rg	0.2	0.55	0.9		NS		Ω
Switching								
Turn-On Time	t _{d(on)}		17	30		15	30	ns
	t _r		13	20		8	15	
Turn-Off Time	t _{d(off)}		45	90		45	90	
	t _f		15	25		18	40	
Source-Drain Reverse Recovery Time	t _{rr}		36	70		36	70	

NS denotes parameter not specified in original data sheet.