



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 (Pb)-free version) Replaces Si4810DY

Si4810BDY-T1 Replaces Si4810DY-T1

Si4810BDY-T1-E3 (Lead (Pb)-free version) Replaces Si4810DY-T1

ABSOLUTE MAXIMUM RATINGS $T_A = 25\text{ }^\circ\text{C}$, 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	I_D	$T_A = 25\text{ }^\circ\text{C}$	10	10	
		$T_A = 70\text{ }^\circ\text{C}$	8	8	
Pulsed Drain Current	I_{DM}	50	50	A	
Continuous Source Current (MOSFET Diode Conduction)	I_S	2.3	2.3		
Average Forward Current (Schottky)	I_F	3.8	4.0		
Pulsed Forward Current (Schottky)	I_{FM}	40	50		
Power Dissipation (MOSFET)	P_D	$T_A = 25\text{ }^\circ\text{C}$	2.5	2.5	W
		$T_A = 70\text{ }^\circ\text{C}$	1.6	1.3	
Power Dissipation (Schottky)	P_D	$T_A = 25\text{ }^\circ\text{C}$	2.0	2.0	
		$T_A = 70\text{ }^\circ\text{C}$	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 $T_J = 25\text{ }^\circ\text{C}$, 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	$V_{GS(th)}$	1.0		3.0	1.0			
Gate-Body Leakage	I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$T_J = 25\text{ }^\circ\text{C}$	0.007	0.100	0.007	0.100		mA
		$T_J = 100\text{ }^\circ\text{C}$	1.5	10	1.5	10		
		$T_J = 125\text{ }^\circ\text{C}$	6.5	20	6.5	20		
On-State Drain Current	$V_{GS} = 10\text{ V}$	$I_{D(on)}$	20		20			A
Drain-Source On-Resistance	$V_{GS} = 10\text{ V}$	$r_{DS(on)}$	0.0105	0.0135	0.0105	0.0135		Ω
	$V_{GS} = 4.5\text{ V}$		0.016	0.020	0.0155	0.020		
Forward Transconductance		g_{fs}	25		28			S
Diode Forward Voltage (Schottky)	$T_J = 25\text{ }^\circ\text{C}$	V_{SD}	0.485	0.53	0.485	0.53		V
	$T_J = 125\text{ }^\circ\text{C}$		0.420	0.47	0.420	0.47		

Specification Comparison

Vishay Siliconix



SPECIFICATIONS $T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted								
Parameter	Symbol	Si4810BDY			Si4810DY			Unit
		Min	Typ	Max	Min	Typ	Max	
Dynamic								
Total Gate Charge	Q_g		14.5			20	30	nC
Gate-Source Charge	Q_{gs}		6.3			8		
Gate-Drain Charge	Q_{gd}		4.7			7		
Gate Resistance	R_g	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.

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.