



Si4894BDY vs. Si4894DY

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

Part Number Replacements:

Si4894BDY-T1 Replaces Si4894DY-T1
 Si4894BDY-T1—E3 (Lead (Pb)-Free version) Replaces Si4894DY-T1—E3

Summary of Performance:

The Si4894BDY is the replacement for the original Si4894DY; both parts perform identically including limits to the parametric tables below.

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C UNLESS OTHERWISE NOTED)				
Parameter	Symbol	Si4894BDY	Si4894DY	Unit
Drain-Source Voltage	V _{DS}	30	30	V
Gate-Source Voltage	V _{GS}	± 20	± 20	
Continuous Drain Current	T _A = 25 °C	12	12.5	A
	T _A = 70 °C	9.5	10	
Pulsed Drain Current	I _{DM}	40	20	
Continuous Source Current (MOSFET Diode Conduction)	I _S	2.3	2.7	
Power Dissipation	T _A = 25 °C	2.5	3.0	W
	T _A = 70 °C	1.6	1.9	
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	42	°C/W

SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)								
Parameter	Symbol	Si4894BDY			Si4894DY			Unit
		Min	Typ	Max	Min	Typ	Max	
Static								
Gate-Threshold Voltage	V _{GS(th)}	1.0		3.0	0.8			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)}		0.009	0.011		0.010	0.012	Ω
	V _{GS} = 4.5 V		0.013	0.018		0.015	0.018	
Forward Transconductance	g _{fs}		32			30		S
Diode Forward Voltage	V _{SD}		0.76	1.1		0.7	1.1	V
Dynamic								
Total Gate Charge	V _{GS} = 10 V Q _g		25.4	38		20	30	nC
	V _{GS} = 5 V		13.2	20		11.5	17	
Gate-Source Charge	Q _{gs}		5.3			3.0		
Gate-Drain Charge	Q _{gd}		4.3			4.5		
Gate Resistance	R _g	0.9	1.8	2.7	1		2.4	Ω
Switching								
Turn-On Time	t _{d(on)}		13	20		10	20	ns
	t _r		10	15		5	10	
Turn-Off Time	t _{d(off)}		33	50		30	60	
	t _f		10	15		10	20	
Source-Drain Reverse Recovery Time	t _{rr}		25	40		30	60	

NS denotes parameter not specified in original data sheet.