Si4890BDY vs. Si4890DY

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

Part Number Replacements: Si4890BDY-T1-E3 replaces Si4890DY-T1-E3
Si4890BDY-T1-E3 replaces Si4890DY-T1

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted

PARAMETER		SYMBOL	Si4890BDY	Si4890DY	UNIT
Drain-Source Voltage		V_{DS}	30	30	V
Gate-Source Voltage		V_{GS}	± 25	± 25	
Continuous Drain Current	T_A = 25 °C	I_D	10.7	11	A
	T_A = 70 °C		8.6	9	
Pulsed Drain Current		I_{DM}	60	50	
Continuous Source Current (MOSFET Diode Conduction)		I_S	2.2	2.3	
Power Dissipation	T_A = 25 °C	P_D	2.5	2.5	W
	T_A = 70 °C		1.6	1.6	
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	50	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted

PARAMETER		SYMBOL	Si4890BDY			Si4890DY			UNIT
			MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	1.4		2.6	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			40			A
Drain-Source On-Resistance	V_{GS} = 10 V	$r_{DS(on)}$		0.009	0.012		0.0098	0.012	Ω
	V_{GS} = 4.5 V			0.012	0.016		0.0164	0.020	
Forward Transconductance		g_{fs}		30			21		S
Diode Forward Voltage		V_{SD}		0.76	1.1		0.71	1.1	V
Dynamic									
Total Gate Charge[a]		Q_g		10	15		14.2	20	nC
Gate-Source Charge		Q_{gs}		4.3			3.3		
Gate-Drain Charge		Q_{gd}		2.6			6.6		
Gate Resistance		R_g		0.77	1.5		NS		Ω

Note

NS denotes not specified in original datasheet
a. V_{GS} = 4.5 V for the Si4890BDY; V_{GS} = 5 V for the Si4890DY

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.