Si9936BDY vs. Si9936DY

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

Part Number Replacements:

Si9936BDY Replaces Si9936DY
Si9936BDY-E3 (Lead (Pb)-free version) Replaces Si9936DY
Si9936BDY-T1 Replaces Si9936DY-T1
Si9936BDY-T1-E3 (Lead (Pb)-free version) Replaces Si9936DY-T1

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

Parameter		Symbol	Si9936BDY	Si9936DY	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	6.0	5.0	A
	T_A = 70 °C		4.8	4.0	
Pulsed Drain Current		I_{DM}	40	40	
Continuous Source Current (MOSFET Diode Conduction)		I_S	2.3	1.7	
Power Dissipation	T_A = 25 °C	P_D	2.0	2.0	W
	T_A = 70 °C		1.3	1.3	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	62.5	62.5	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted

Parameter		Symbol	Si9936BDY			Si9936DY			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	1.0		3.0	1.0			V
Gate-Body Leakage		I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current		I_{DSS}			1			2	µA
On-State Drain Current	V_{GS} = 10 V	$I_{D(on)}$	40			40			A
Drain-Source On-Resistance	V_{GS} = 10 V	$r_{DS(on)}$		0.028	0.035		0.039	0.050	Ω
	V_{GS} = 4.5 V			0.041	0.052		0.052	0.080	
Forward Transconductance		g_{fs}		12			10		S
Diode Forward Voltage		V_{SD}		0.8	1.2		0.72	1.2	V
Dynamic									
Total Gate Charge		Q_g		8.6	13		13.5	35	nC
Gate-Source Charge		Q_{gs}		1.8			1.9		
Gate-Drain Charge		Q_{gd}		1.5			3		
Gate Resistance		R_g		2.8			NS		Ω
Switching									
Turn-On Time		$t_{d(on)}$		10	15		11	30	ns
		t_r		15	25		9	25	
Turn-Off Time		$t_{d(off)}$		25	40		25	50	
		t_f		10	15		10	50	
Source-Drain Reverse Recovery Time		t_{rr}		20	40		60	160	

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.