Si4401BDY vs. Si4401DY

Description: **P-Channel, 40 V (D-S) MOSFET**
Package: **SO-8**
Pin Out: **Identical**

Part Number Replacements:
Si4401BDY-T1-E3 Replaces Si4401DY-T1-E3
Si4401BDY-T1 Replaces Si4401DY-T1

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted					
Parameter		**Symbol**	**Si4401BDY**	**Si4401DY**	**Unit**
Drain-Source Voltage		V_{DS}	- 40	- 40	V
Gate-Source Voltage		V_{GS}	± 20	± 20	
Continuous Drain Current	T_A = 25 °C	I_D	- 10.5	- 10.5	A
	T_A = 70 °C		- 8.3	- 8.3	
Pulsed Drain Current		I_{DM}	- 50	- 50	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 2.6	- 2.7	
Power Dissipation	T_A = 25 °C	P_D	2.9	3.0	W
	T_A = 70 °C		1.85	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}	43	42	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted									
Parameter		**Symbol**	**Si4401BDY**			**Si4401DY**			**Unit**
			Min	**Typ**	**Max**	**Min**	**Typ**	**Max**	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	- 1.0		- 3.0	- 1.0		NS	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} = - 4.5 V	$I_{D(on)}$	- 30			- 30			A
Drain-Source On-Resistance	V_{GS} = - 4.5 V	$r_{DS(on)}$		0.011	0.014		0.013	0.0155	Ω
	V_{GS} = - 2.5 V			0.0165	0.021		0.0185	0.0225	
Forward Transconductance		g_{fs}		26			26		S
Diode Forward Voltage		V_{SD}		- 0.74	- 1.1		- 0.74	- 1.1	V
Dynamic									
Total Gate Charge		Q_g		40	55		37.5	50	nC
Gate-Source Charge		Q_{gs}		10			14.3		
Gate-Drain Charge		Q_{gd}		14			10.7		
Gate Resistance		R_g	1.4	2.8	4.2		3.8		Ω
Switching									
Turn-On Time		$t_{d(on)}$		16	25		17	30	ns
		t_r		15	25		18	30	
Turn-Off Time		$t_{d(off)}$		97	150		122	190	
		t_f		47	75		55	85	
Source-Drain Reverse Recovery Time		t_{rr}		35	55		45	NS	

NS denotes 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.