Si4401DDY vs. Si4401BDY

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

Part Number Replacements: Si4401DDY-T1-GE3 Replaces Si4401BDY-T1-E3
Si4401DDY-T1-GE3 Replaces Si4401BDY-T1-GE3

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C, unless otherwise noted)					
PARAMETER		**SYMBOL**	**Si4401DDY**	**Si4401BDY**	**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	- 10.2	- 10.5	A
	T_A = 70 °C		- 8.2	- 8.3	
Pulsed Drain Current		I_{DM}	- 50	- 50	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 2.1	- 2.6	
Power Dissipation	T_A = 25 °C	P_D	2.5	2.9	W
	T_A = 70 °C		1.6	1.85	
Operating Junction and Storage Temperature Range		T_i, T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	50	43	°C/W

SPECIFICATIONS (T_J = 25 °C, unless otherwise noted)									
			Si4401DDY			**Si4401BDY**			
PARAMETER		**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	- 1.2	-	- 2.5	- 1	-	- 3	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	$I_{D(on)}$	- 25	-	-	- 30	-	-	A
Drain-Source On-Resistance	V_{GS} = - 10 V	$R_{DS(on)}$	-	0.012	0.015	-	0.011	0.014	Ω
	V_{GS} = - 4.5 V		-	0.018	0.022	-	0.0165	0.0210	
Forward Transconductance		g_{fs}	-	37	-	-	26	-	S
Diode Forward Voltage		V_{SD}	-	- 0.8	- 1.2	-	- 0.74	- 1.1	V
Dynamic									
Total Gate Charge (1)		Q_g	-	33	50	-	40	55	nC
Gate-Source Charge		Q_{gs}	-	9.8	-	-	10	-	
Gate-Drain Charge		Q_{gd}	-	15.7	-	-	14	-	
Gate Resistance		R_g	0.4	2	4	1.4	2.8	4.2	Ω

Notes

- NS denotes not specified in original datasheet

(1) V_{GS} = - 5 V for Si4401BDY

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.