Si4403BDY vs. Si4403DY

Description: P-Channel, 1.8 V (G-S) MOSFET
Package: SOIC-8
Pin Out: Identical

Part Number Replacements:

Si4403BDY Replaces Si4403DY
Si4403BDY-E3 (Lead (Pb)-free version) Replaces Si4403DY
Si4403BDY-T1 Replaces Si4403DY-T1
Si4403BDY-T1-E3 (Lead (Pb)-free version) Replaces Si4403DY-T1

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

Parameter		Symbol	Si4403BDY	Si4403DY	Unit
Drain-Source Voltage		V_{DS}	- 20	- 20	V
Gate-Source Voltage		V_{GS}	± 8	± 8	
Continuous Drain Current	T_A = 25 °C	I_D	- 9.9	- 9.0	A
	T_A = 70 °C		- 7.9	- 7.0	
Pulsed Drain Current		I_{DM}	- 30	- 30	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 2.3	- 2.1	
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	Si4403BDY			Si4403DY			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{G(th)}$	- 0.45		- 1.0	- 0.45			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	$I_{D(on)}$	- 20			- 20			A
Drain-Source On-Resistance	V_{GS} = - 4.5 V	$r_{DS(on)}$		0.014	0.017		0.014	0.017	Ω
	V_{GS} = - 2.5 V			0.018	0.023		0.018	0.023	
	V_{GS} = - 1.8 V			0.024	0.032		0.024	0.032	
Forward Transconductance		g_{fs}		36			28		S
Diode Forward Voltage		V_{SD}		- 0.8	- 1.1		- 0.64	- 1.1	V
Dynamic									
Total Gate Charge		Q_g		33	50		30.5	50	nC
Gate-Source Charge		Q_{gs}		4.2			5.3		
Gate-Drain Charge		Q_{gd}		7.6			3.8		
Switching									
Turn-On Time		$t_{d(on)}$		25	40		30	50	ns
		t_r		45	70		30	50	
Turn-Off Time		$t_{d(off)}$		150	225		110	200	
		t_f		70	110		65	110	
Source-Drain Reverse Recovery Time		t_{rr}		40	60		45	80	

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.