Si7403BDN vs. Si7403DN

Description: **P-Channel, 20 V (D-S) MOSFET**
Package: **PowerPAK® 1212-8**
Pin Out: **Identical**

Part Number Replacements:
Si7403BDN-T1-E3 Replaces Si7403DN-T1-E3
Si7403BDN-T1 Replaces Si7403DN-T1

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

Parameter		Symbol	Si7403BDN	Si7403DN	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	- 5.1	- 4.5	A
	T_A = 85 °C		- 4.1	- 3.2	
Pulsed Drain Current		I_{DM}	- 20	- 20	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 2.6	- 3.0	
Power Dissipation	T_A = 25 °C	P_D	3.1	3.5	W
	T_A = 85 °C		2	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}	40	35	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted

Parameter		Symbol	Si7403BDN			Si7403DN			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	- 0.45		- 1.0	- 0.45		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	$I_{D(on)}$	- 20			- 10			A
	V_{GS} = - 2.5 V		NS			- 4			
Drain-Source On-Resistance	V_{GS} = - 4.5 V	$r_{DS(on)}$		0.059	0.074		0.078	0.100	Ω
	V_{GS} = - 2.5 V			0.080	0.110		0.110	0.135	
Forward Transconductance		g_{fs}		10			8.8		S
Diode Forward Voltage		V_{SD}		- 0.72	- 1.2		- 0.8	- 1.2	V
Dynamic									
Total Gate Charge		Q_g		5.6	8.5		8.6	14	nC
Gate-Source Charge		Q_{gs}		0.95			1.5		
Gate-Drain Charge		Q_{gd}		1.4			3.1		
Gate Resistance		R_g		10			NS		Ω
Switching									
Turn-On Time[a]		$t_{d(on)}$		5	10		27	50	ns
		t_r		51	75		17	30	
Turn-Off Time[a]		$t_{d(off)}$		33	50		52	80	
		t_f		60	90		45	70	
Source-Drain Reverse Recovery Time		t_{rr}		20	40		50	80	

Notes:
a. Datasheet test conditions differ; R_L = 2.4 Ω, I_D = - 4.1 A, R_g = 1 Ω on the Si7403BDN and R_L = 10 Ω, I_D = - 1.6 A, R_g = 6 Ω on the Si7403DN.

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.