Si9424BDY vs. Si9424DY

Description: **P-Channel, 2.5 V (G-S) MOSFET**
Package: **SOIC-8**
Pin Out: **Identical**

Part Number Replacements:

Si9424BDY Replaces Si9424DY
Si9424BDY-E3 (Lead (Pb)-free version) Replaces Si9424DY
Si9424BDY-T1 Replaces Si9424DY-T1
Si9424BDY-T1-E3 (Lead (Pb)-free version) Replaces Si9424DY-T1

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

Parameter		Symbol	Si9424BDY	Si9424DY	Unit
Drain-Source Voltage		V_{DS}	- 12	- 12	V
Gate-Source Voltage		V_{GS}	± 9	± 8	
Continuous Drain Current	T_A = 25 °C	I_D	- 7.1	- 7.7	A
	T_A = 70 °C		- 5.6	- 6.2	
Pulsed Drain Current		I_{DM}	- 30	- 30	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 1.7	- 2.3	
Power Dissipation	T_A = 25 °C	P_D	2.0	2.5	W
	T_A = 70 °C		1.3	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}	62.5	50	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted

Parameter		Symbol	Si9424BDY			Si9424DY			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	- 0.45		- 0.85	- 0.6			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	$r_{DS(on)}$		0.014	0.025		0.019	0.025	Ω
	V_{GS} = - 2.5 V			0.019	0.033		0.024	0.033	
Forward Transconductance		g_{fs}		25			25		S
Diode Forward Voltage		V_{SD}		- 0.7	- 1.2		- 0.72	- 1.2	V
Dynamic									
Total Gate Charge		Q_g		24	40		46	80	nC
Gate-Source Charge		Q_{gs}		3.5			6		
Gate-Drain Charge		Q_{gd}		5.8			13		
Switching									
Turn-On Time		$t_{d(on)}$		30	45		40	80	ns
		t_r		40	60		65	130	
Turn-Off Time		$t_{d(off)}$		130	200		240	400	
		t_f		70	105		140	250	
Source-Drain Reverse Recovery Time		t_{rr}		50	100		70	120	

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.