



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 $T_A = 25^\circ\text{C}$, 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	$T_A = 25^\circ\text{C}$	- 7.1	- 7.7	A
	$T_A = 70^\circ\text{C}$	- 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	$T_A = 25^\circ\text{C}$	2.0	2.5	W
	$T_A = 70^\circ\text{C}$	1.3	1.6	
Operating Junction and Storage Temperature Range	T_J and T_{stg}	- 55 to 150	- 55 to 150	$^\circ\text{C}$
Maximum Junction-to-Ambient	R_{thJA}	62.5	50	$^\circ\text{C/W}$

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	
	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.

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