Si9434BDY vs. Si9434DY

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

Part Number Replacements:
Si9434BDY-T1 Replaces Si9434DY-T1
Si9434BDY-T1-E3 (Lead (Pb)-free version) Replaces Si9434DY-T1-E3

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

Parameter		Symbol	Si9434BDY	Si9434DY	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	- 6.3	- 6.4	A
	T_A = 70 °C		- 5.0	- 5.1	
Pulsed Drain Current		I_{DM}	- 20	- 10	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 2.3	- 2.5	
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	Si9434BDY			Si9434DY			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	- 0.45		- 1.5	- 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	$I_{D(on)}$	- 20			- 10			A
	V_{GS} = - 2.5 V		- 5			- 5			
Drain-Source On-Resistance	V_{GS} = - 4.5 V	$r_{DS(on)}$		0.033	0.040		0.031	0.040	Ω
	V_{GS} = - 2.5 V			0.044	0.055		0.045	0.060	
Forward Transconductance		g_{fs}		10			14		S
Diode Forward Voltage		V_{SD}		- 0.8	- 1.2		- 0.9	- 1.2	V
Dynamic									
Total Gate Charge		Q_g		12	18		30	50	nC
Gate-Source Charge		Q_{gs}		1.7			5		
Gate-Drain Charge		Q_{gd}		3.5			9		
Gate Resistance		R_g		7			NS*		Ω
Switching									
Turn-On Time		$t_{d(on)}$		15	25		25	50	ns
		t_r		45	75		42	80	
Turn-Off Time		$t_{d(off)}$		80	130		160	200	
		t_f		60	100		75	120	
Source-Drain Reverse Recovery Time		t_{rr}		40	70		50	100	

* 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.