



Si9945BDY vs. Si9945AEY

Description: Dual N-Channel, 20-V (D-S) MOSFET

Package: SO-8

Pin Out: Identical

Part Number Replacements: Si9945BDY-T1-GE3 replaces Si9945AEY-T1-E3
Si9945BDY-T1-GE3 replaces Si9945AEY-T1

ABSOLUTE MAXIMUM RATINGS $T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted				
PARAMETER	SYMBOL	Si9945BDY	Si9945AEY	UNIT
Drain-Source Voltage	V_{DS}	60	60	V
Gate-Source Voltage	V_{GS}	± 20	± 20	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	4.3	A
	$T_A = 70\text{ }^\circ\text{C}$		3.4	
Pulsed Drain Current	I_{DM}	20	25	
Continuous Source Current (MOSFET Diode Conduction)	I_S	1.7	2	
Maximum Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	2.0	W
	$T_A = 70\text{ }^\circ\text{C}$		1.3	
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	62.5	$^\circ\text{C/W}$

SPECIFICATIONS $T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted								
PARAMETER	SYMBOL	Si9945BDY			Si9945AEY			UNIT
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Static								
Gate-Threshold Voltage	$V_{GS(th)}$	1		3	1		3	V
Gate-Body Leakage	I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}			1			1	μA
On-State Drain Current	$V_{GS} = 4.5\text{ V}$ $I_{D(on)}$	20			20			A
Drain-Source On-Resistance	$V_{GS} = 4.5\text{ V}$ $R_{DS(on)}$		0.046	0.058		0.060	0.080	Ω
	$V_{GS} = 2.5\text{ V}$		0.059	0.072		0.075	0.100	
Forward Transconductance	g_{fs}		15			11		S
Diode Forward Voltage	V_{SD}		0.8	1.2		NS	1.2	V
Dynamic								
Total Gate Charge	Q_g		13	20		11	20	nC
Gate-Source Charge	Q_{gs}		2.3			2		
Gate-Drain Charge	Q_{gd}		2.6			2		
Gate Resistance	R_g		2			NS		

Note

NS denotes not specified in original specification

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.