SUP70N03-09BP vs. SUP70N03-09P

Description: **N-Channel, 30 V (D-S) 175 °C MOSFET PWM Optimized**
Package: **TO-220**
Pin Out: **Identical**

Part Number Replacements

SUP70N03-09BP-E3 Replaces SUP70N03-09P-E3
SUP70N03-09BP Replaces SUP70N03-09P

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C, unless otherwise noted)					
Parameter		**Symbol**	**SUP70N03-09BP**	**SUP70N03-09P**	**Unit**
Drain-Source Voltage		V_{DS}	30	30	V
Gate-Source Voltage		V_{GS}	± 20	± 20	
Continuous Drain Current	T_C = 25 °C	I_D	70	70	A
	T_C = 70 °C		50	50	
Pulsed Drain Current		I_{DM}	200	180	
Power Dissipation	T_C = 25 °C	P_D	93	93	W
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 175	- 55 to 175	°C
Maximum Junction-to-Ambient		R_{thJA}	62.5	62.5	°C/W

SPECIFICATIONS (T_J = 25 °C, unless otherwise noted)									
Parameter		**Symbol**	**SUP70N03-09BP**			**SUP70N03-09P**			**Unit**
			Min	**Typ**	**Max**	**Min**	**Typ**	**Max**	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	0.8		2	1	2		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} = 10 V	$I_{D(on)}$	70			70			A
Drain-Source On-Resistance	V_{GS} = 10 V	$r_{DS(on)}$		0.007	0.009		0.007	0.009	Ω
	V_{GS} = 4.5 V			0.011	0.013		0.011	0.015	
Forward Transconductance		g_{fs}	20	45		30	60		S
Diode Forward Voltage		V_{SD}		1.1	1.5		1.2	1.5	V
Dynamic									
Total Charge		Q_g[1]		15.5	19		45	70	nC
Gate-Source Charge		Q_{gs}		5			8.5		
Gate-Drain Charge		Q_{gd}		6			11		
Gate Resistance		R_g		2			NS		Ω
Switching									
Turn-On Time		$t_{d(on)}$		10	18		13	20	ns
		t_r		8	15		7	15	
Turn-Off Time		$t_{d(off)}$		25	45		35	60	
		t_f		9	16		12	20	
Source-Drain Reverse Recovery Time		t_{rr}		30	60		35	70	

NS denotes parameter not specified

1. For SUP70N03-09BP, V_{GS} = 5 V. For SUP70N03-09P, V_{GS} = 10 V.

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.