



TN0200K vs. TN0200T

Description: N-Channel MOSFET
Package: SOT-23
Pin Out: Identical

Part Number Replacements:

TN0200K-T1 Replaces TN0200T-T1
TN0200K-T1—E3 (Lead Free version) Replaces TN0200T-T1

Summary of Performance:

The TN0200K is a technological upgrade with ESD protection for the original TN0200T. The ESD protection diodes on the gate increase Gate-Body Leakage; otherwise both parts perform identically including limits to the parametric tables below.

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	TN0200K	TN0200T	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	0.73	0.73	A
	See Note		0.58	0.58	
Pulsed Drain Current		I _{DM}	4	4	
Power Dissipation	T _A = 25°C	P _D	0.35	0.35	W
	T _A = 70°C		0.22	0.22	
Operating Junction and Storage Temperature Range		T _J and T _{stg}	-55 to 150	-55 to 150	°C
Maximum Junction-to-Ambient		R _{thJA}	357	357	°C/W

SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)									
Parameter	Symbol	TN0200K			TN0200T			Unit	
		Min	Typ	Max	Min	Typ	Max		
Static									
Drain-Source Breakdown Voltage	V _{(BR)DSS}	20			20			V	
Gate-Threshold Voltage	V _{G(th)}	0.45	0.6	1.0	0.5	0.9	1.5		
Gate-Body Leakage	I _{IGSS}			±5000			±100	nA	
Zero Gate Voltage Drain Current	I _{DBSS}			1			1	µA	
On-State Drain Current	V _{GS} = 4.5 V	I _{D(on)}	2.5			2.5		A	
	V _{GS} = 2.5 V		1.5			1.5			
Drain-Source On-Resistance	V _{GS} = 4.5 V	r _{DS(on)}		0.2	0.4		0.29	0.4	Ω
	V _{GS} = 2.5 V			0.25	0.5		0.34	0.5	
Forward Transconductance	g _{fs}		2.2			2.2		S	
Diode Forward Voltage	V _{SD}		0.8	1.2		0.8	1.2	V	
Dynamic									
Total Gate Charge	Q _g		1400	2000		1900	2800	pC	
Gate-Source Charge	Q _{gs}		190			50		nC	
Gate-Drain Charge	Q _{gd}		300			750			
Switching									
Turn-On Time	t _{d(on)}		17	25		8	13	ns	
	t _r		20	30		14	21		
Turn-Off Time	t _{d(off)}		55	85		21	30		
	t _f		30	45		7	11		

NS denotes parameter not specified.