Product / Process Change Notification (PCN)

909 N Pacific Coast Highway, Suite 230, El Segundo, CA 90245

Notification Date: December 23, 2019

PCN Number: PCN191201

PCN Title: Process Change

Product Identification:

The following released to sales part numbers will be impacted by this change:

EPC Part Number
EPC2021

You are receiving this notice because our records indicated that you have purchased the impacted device in the past two years.

Description of Change:

As part of continuous improvement efforts, we have made process modifications to the manufacturing steps that have improved the process. There is no change to device pin-out. Impacted datasheet parameters are noted in the tables below. Please consult EPC for applications support if needed.

Maximum Ratings				
Parameter		Aug 2019 Datasheet	Dec 2019 Datasheet	Units
V_{DS}	Drain-to-Source Voltage (Continuous)	80	80	V
V_{DS}	Drain-to-Source Voltage (up to 10,000 5 ms pulses at 150°C)	96	96	V
I_D	Continuous (T_A = 25°C)	90	90	A
	Pulsed (25°C, T_{Pulse} = 300 µs)	420	**390**	A
V_{GS}	Gate-to-Source Voltage	6	6	V
	Gate-to-Source Voltage	-4	-4	V
T_J	Operating Temperature	-40 to 150	-40 to 150	°C
T_{STG}	Storage Temperature	-40 to 150	-40 to 150	°C

Static Characteristics									
			Aug 2019 Datasheet			Dec 2019 Datasheet			
PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	MIN	TYP	MAX	UNIT
BV_{DSS}	Drain-to-Source Voltage	V_{GS} = 0 V, I_D = 500 µA	80			80			V
I_{DSS}	Drain Source Leakage	V_{DS} = 64 V, V_{GS} = 0 V		100	700		**20**	**200**	µA
I_{GSS}	Gate-to-Source Forward Leakage	V_{GS} = 5 V, T_J = 25 °C		1	9		**0.02**	**4**	mA
	Gate-to-Source Forward Leakage#	V_{GS} = 5 V, T_J = 125 °C		N/A	N/A		0.1	9	mA
	Gate-to-Source Reverse Leakage	V_{GS} = -4 V		100	700		**20**	**200**	µA
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 13 mA	0.8	1.4	2.5	0.7	**1.2**	**2.5**	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS} = 5 V, I_D = 29 A		1.8	2.5		**1.8**	**2.2**	mΩ
V_{SD}	Source-Drain Forward Voltage	I_S = 0.5 A, V_{GS} = 0 V		1.6			**1.5**		V
All measurements were done with substrate connected to source.									
# Defined by design. Not subject to production test.									

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Dynamic Characteristics									
			Aug 2019 Datasheet			Dec 2019 Datasheet			
PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	MIN	TYP	MAX	UNIT
C_{ISS}	Input Capacitance#	V_{DS} = 40 V, V_{GS} = 0 V		1650	1980		**1610**	**1940**	pF
C_{RSS}	Reverse Transfer Capacitance			20			**15**		
C_{OSS}	Output Capacitance#			970	1460		**1100**	**1650**	
$C_{OSS(ER)}$	Effective Output Capacitance, Enegy Related (Note 2)	V_{DS} = 0 to 40 V, V_{GS} = 0 V		1090			**1450**		
$C_{OSS(TR)}$	Effective Output Capacitance, Time Related (Note 3)			1310			**1790**		
R_G	Gate Resistance			0.3			0.3		Ω
Q_G	Total Gate Charge#	V_{DS} = 40 V, V_{GS} = 5 V, I_D = 29 A		15	19		15	19	nC
Q_{GS}	Gate to Source Charge	V_{DS} = 40 V, I_D = 29 A		3.4			**4.1**		
Q_{GD}	Gate to Drain Charge			2.3			**3**		
$Q_{G(TH)}$	Gate Charge at Threshold			2.5			**2.7**		
Q_{OSS}	Output Charge#	V_{DS} = 40 V, V_{GS} = 0 V		63	95		**72**	**108**	
Q_{RR}	Source-Drain Recovery Charge			0			0		
All measurements were done with substrate connected to source.									
# Defined by design. Not subject to production test.									
Note 2: $C_{OSS(ER)}$ is a fixed capacitance that gives the same stored energy as C_{OSS} while V_{DS} is rising from 0 to 50% BV_{DSS}.									
Note 3: $C_{OSS(TR)}$ is a fixed capacitance that gives the same charging time as C_{OSS} while V_{DS} is rising from 0 to 50% BV_{DSS}.									

This change will be in effect for devices shipping with date code of 10D1918 (work week 18, year 2019) or later.

Last Time Buy:
Contact EPC

Samples
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Information Request
If there are any questions, comments or information required regarding this PCN please contact your local EPC Sales Representative or the following EPC contacts directly.

EPC Sales Contact:	Renee Yawger	+1.908.475.5702	(renee.yawger@epc-co.com)
EPC Engineering Contact:	Bhasy Nair	+1.972.805.8585	(bhasy.nair@epc-co.com)

EPC CONSIDERS THIS CHANGE APPROVED IF WE DO NOT RECEIVE ANY WRITTEN OBJECTION WITHIN 30 DAYS FROM NOTIFICATION DATE OF THIS PCN LETTER.

909 N Pacific Coast Highway, Suite 230, El Segundo, CA 90245

EPC Approval:

This PCN has been reviewed and approved by EPC's Quality & Reliability department:

Quality Director: Yanping Ma

Date: 12/23/2019