

Absolute Maximum Ratings

Exceeding the Absolute Maximum Ratings may damage the device.

Parameter	Rating
V_{HV}	-0.3V to 500V
V_{DRAIN}	-0.7V to 700V
V_{DD}, V_{CGATE}	-0.3V to 40V
$V_{CS}, V_{RXP}, V_{RXN}, V_{PRO}$	-0.3V to 7V
V_{MGATE}	-0.3V to 20V
Junction Temperature (T_J)	+150°C
Storage Temperature (T_S)	-65°C to +150°C
ESD HBM ⁽¹⁾	4kV
ESD CDM ⁽¹⁾	1kV

Notes:

1. Devices are inherently ESD sensitive, handling precautions are required. Human body model rating: 1.5k Ω in series with 100pF.
2. 1x1inch, 2-layer PCB, follow JEDEC standard.

Electrical Characteristics

$V_{DD}=15V$, $T_A = -25^\circ C$ to $85^\circ C$, unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Units
MOSFET						
$R_{DS(ON)}$	ON State Resistance	Static, $I_{DRAIN} = 1A$, $V_{DD} = 10V$, $T_J = 25^\circ C$		0.6	0.75	
HV						
I_{HV}	Supply Current from HV Pin	$V_{HV} = 100V$, $V_{DD} = 0V$, converter OFF		3.2	4.6	mA
I_{HV_LC}	Leakage Current from HV Pin	$V_{HV} = 500V$, $V_{DD} = 18V$, converter ON		0.8		μA
VDD						
V_{DD_OVP}	VDD Over-Voltage Protection Level		34	36	38.2	V
t_{D_OVP}	VDD Over-Voltage Protection Debounce Time ⁽¹⁾			20		μs
V_{DD_ON}	Turn-ON Threshold Voltage		14.0	15.5	17.0	V
V_{DD_UVLO}	Turn-OFF and Under Voltage Lock Out		6.2	6.7	7.2	V
I_{DD_OP}	Operation Current	$V_{DD} = 15V$, converter ON, $f_S = 80kHz$		0.8	1.2	mA
I_{DD_SKIP}	Skip Mode Operation Current	$V_{DD} = 7V$		500	550	μA
I_{DD_DIS}	Disable Mode Operation Current	$V_{DD} = 15V$, V_{DD_OVP} is enabled or no GATE output		70	100	μA
Frequency						
f_{OSC}	Start-up Operation Frequency	$V_{PRO} = 1V$		100		kHz
f_{OSC1}		$V_{PRO} = 0.5V$		50		kHz

Recommended Operating Conditions

The device is not guaranteed to operate beyond the Maximum Recommended Operating Conditions.

Parameter	Rating
Supply Voltage (V_{DD})	8V to 33V
Ambient Temperature (T_A)	-40°C to +125°C
Package Thermal Resistance	25°C/W ⁽²⁾

