

SGL100T120SF

1200V 100A FieldStop Trench IGBT

Features

- FieldStop Trench Technology, Positive temperature coefficient
- $V_{CE(sat)}=2.0V@I_C=100A$
- High Speed Switching & Low Power Loss
- High Input Impedance

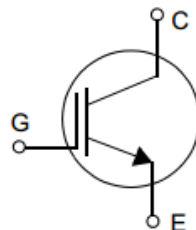
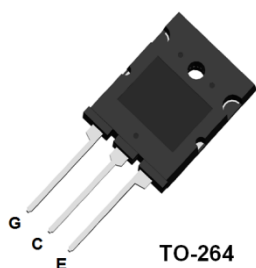
Description

The device is designed by advanced FieldStop Trench technology process. This IGBT offer low $V_{CE(sat)}$, high speed switching performance and excellent quality for application such as PFC,UPS, Welder, PV Inverter and other switching applications.

Applications

- PFC, UPS, Welder, PV Inverter

Package Type & Internal Circuit



Absolute Maximum Ratings

Symbol	Parameter		Ratings	Unit
V _{CES}	Collector to Emitter Voltage		1200	V
V _{GES}	Gate to Emitter Voltage		±20	V
I _C	Collector Current	T _C =25℃	200	A
		T _C =90℃	120	A
		T _C =100℃	100	A
I _{CM}	Pulsed Collector Current		300	A
P _D	Maximum Power Dissipation	T _C =25℃	833	W
		T _C =100℃	380	W
T _J	Operating Junction Temperature Range		-55~+150	℃
T _{STG}	Storage Temperature Range		-55~+150	℃

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{th(J-C)}$ (IGBT)	Thermal Resistance, Junction to case for IGBT	0.15	$^{\circ}C/W$
$R_{th(J-A)}$	Thermal Resistance, Junction to Ambient	18	$^{\circ}C/W$

**Electrical Characteristics of IGBT** @T_C=25 °C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{CES}	Collector to Emitter Breakdown Voltage	V _{GE} =0V, I _C =250uA	1200	-	-	V
V _{CE(sat)}	Collector to Emitter Saturation Voltage	I _C =100A, V _{GE} =15V	-	2.0	2.4	V
		I _C =100A, V _{GE} =15V, T _C =125 °C	-	2.7	-	V
V _{GE(th)}	Gate Threshold Voltage	V _{CE} =V _{GE} , I _C =250uA	4.5	5.2	7.5	V
I _{CES}	Zero Gate Voltage Collector Current	V _{CE} =V _{CES} , V _{GE} =0V	-	-	1	mA
I _{GES}	Gate to Emitter Leakage Current	V _{GE} =V _{GES} , V _{CE} =0V	-	-	± 250	nA

Switching Characteristics @T_C=25 °C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
t _{d(on)}	Turn-on Delay Time	I _C =100A, V _{CC} =600V, V _{GE} =15V, R _G =10Ω, Inductive Load, T _C =25 °C	-	165	-	ns
t _r	Rising Time		-	215	-	ns
t _{d(off)}	Turn-off Delay Time		-	600	-	ns
t _f	Falling Time		-	42	-	ns
E _{on}	Turn-on Switching Loss		-	4.5	-	mJ
E _{off}	Turn-off Switching Loss		-	2.6	-	mJ
E _{ts}	Total Switching Loss		-	5.9	-	mJ
t _{d(on)}	Turn-on Delay Time	I _C =100A, V _{CC} =600V, V _{GE} =15V, R _G =10Ω Inductive Load, T _C =125 °C	-	167	-	ns
t _r	Rising Time		-	220	-	ns
t _{d(off)}	Turn-off Delay Time		-	645	-	ns
t _f	Falling Time		-	180	-	ns
E _{on}	Turn-on Switching Loss		-	7.6	-	mJ
E _{off}	Turn-off Switching Loss		-	3.7	-	mJ
E _{ts}	Total Switching Loss		-	8.1	-	mJ
C _{ies}	Input Capacitance	V _{GE} =0V, V _{CE} =25V, f=1.0MHz	-	4693	-	pF
C _{res}	Reverse Transfer Capacitance		-	425	-	pF
C _{oes}	Output Capacitance		-	155	-	pF
Q _g	Total Gate Charge	I _C =100A, V _{CC} =960V V _{GE} =15V	-	275	-	nC
Q _{ge}	Gate to Emitter Charge		-	54	-	nC
Q _{gc}	Gate to Collector Charge		-	185	-	nC
t _{sc}	Short Circuit With stand Time	V _{CC} =600V, V _{GE} =15V	10	-	-	us

Package Dimensions

TO-264

(Dimensions in Millimeters)

