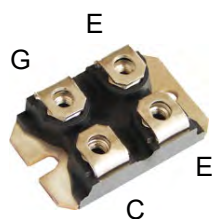
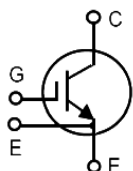


SG100T60S SG100T60DS

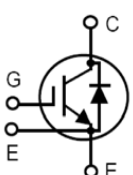
Discrete IGBTs



SG100T60S

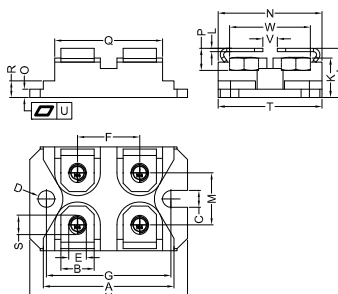


SG100T60DS



G=Gate
C=Collector
E=Emitter

Dimensions SOT-227(ISOTOP)



Dim.	Millimeter		Dim.	Millimeter	
	Min.	Max.		Min.	Max.
A	31.30	31.65	M	12.00	13.00
B	7.80	8.40	N	25.15	25.65
C	4.00	4.30	O	1.95	2.15
D	Ø4.00	Ø4.30	P	5.60	6.60
E	4.00	4.30	Q	25.30	26.30
F	14.90	15.20	R	3.90	4.30
G	30.10	30.30	S	4.45	4.85
H	38.00	38.50	T	24.50	25.10
J	12.10	12.90	U	0.05	0.10
K	9.00	9.60	V	3.00	4.80
L	0.75	0.85	W	19.30	20.50

T_C = 25°C, unless otherwise specified

Symbol	Conditions	Values	Units
IGBT			
V _{CES}		600	V
I _C	T _C = 25(100)°C	200(100)	A
I _{CRM}	T _C = 25°C, t _P = 1ms	200	A
V _{GES}		±20	V
T _{Vj}		-40...+175	°C
InverseDiode			
I _F = -I _C	T _C = 25(100)°C	200(100)	A
I _{FRM}	T _C = 25°C, t _P = 1ms	200	A
I _{FSM}	t _P = 10ms; sin180° ; T _j = 25°C	200	A
V _{RRM}		600	V
Module			
I _{t(RMS)}	T _{terminal} = 100°C	100	A
T _{stg}		-40~125	°C
V _{Isol}	AC, 1min	4000	V

Features

- Trench Gate Field Stop IGBT technology
- Standard SOT-227 package style
- Low switching losses
- Switching frequency up to 30kHz
- Square RBSOA, no latch up
- High short circuit capability
- Positive temperature coefficient for easy parallelling
- MOS input, voltage controlled
- Soft switching diode Technology
- Package with copper baseplate
- Isolation voltage 4000 V

Application

- Inverter welding Machines
- UPS
- AC inverter Drives

Advantages

- Spaceand weight savings
- Reduced protection circuits



Sirectifier®

SG100T60S SG100T60DS

Discrete IGBTs

Characteristics

T_C = 25°C, unless otherwise specified

Symbol	Conditions	min.	typ.	max.	Units
IGBT					
V _{GE(th)}	V _{CE} = 20 V, I _C = 3mA	5.0	5.5	6.5	V
I _{CES}	V _{GE} = 0; V _{CE} = V _{CES} ; T _J = 25°C			0.20	mA
V _{CE(TO)}	T _J = 25°C		0.8	0.9	V
r _{CE}	V _{GE} = 15V, T _J = 25(150)°C		3.2(4.5)	3.6(4.9)	mΩ
V _{CE(sat)}	I _C = 100A; V _{GE} = 15V; chip level		2.05	2.50	V
C _{ies}	under following conditions		11.00		nF
C _{oes}	V _{GE} = 0, V _{CE} = 25V, f = 1MHz		1.00		
C _{res}			0.15		
L _{CE}				30	nH
R _{CC'+EE'}	res., terminal-chip T _C = 25(125)°C		0.65(1.09)		mΩ
t _{d(on)}	under following conditions: V _{CC} = 300V,		105		ns
t _r	I _C = 100A		35		ns
t _{d(off)}	R _{Gon} = R _{Goff} = 33Ω, T _J = 150°C		270		ns
t _f	V _{GE} = ± 15V		48		ns
E _{on} /E _{off} /E _{ts}			1.00/1.24/2.24		mJ
Inverse Diode	under following conditions: I _F = 100A;				
V _F = V _{EC}	V _{GE} = 0V; T _J = 25°C		2.00		V
V _(FO)	T _J = 25(125)°C		1.3(0.95)	1.5(1.2)	V
r _F	T _J = 25(125)°C		18(25)	22(28)	mΩ
I _{RM}	I _F = 100A; T _J = 125°C		5.6		A
Q _{rr}	di/dt = 100A/us		0.15		uC
E _{rr}	V _{GE} = ±15V		0.9		mJ
Thermal Characteristics					
R _{th(j-c)}	per IGBT			0.38	K/W
R _{th(j-c)D}	per Inverse Diode			0.92	K/W
R _{th(c-s)}	per module			0.27	K/W
Mechanical Data					
M _s	to heatsink M4		1.5		Nm
M _t	to terminals M4		1.5		Nm
Weight	typical		30		g

Sirectifier®

SG100T60S SG100T60DS

Discrete IGBTs

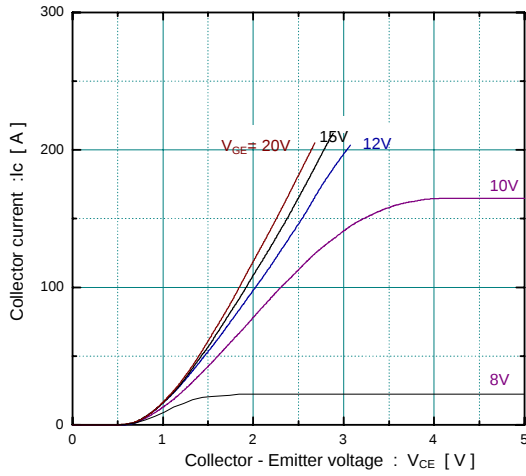


Fig.1 Collector current vs. Collector-Emittter voltage
 $T_j = 25^\circ\text{C}$ (typ.)

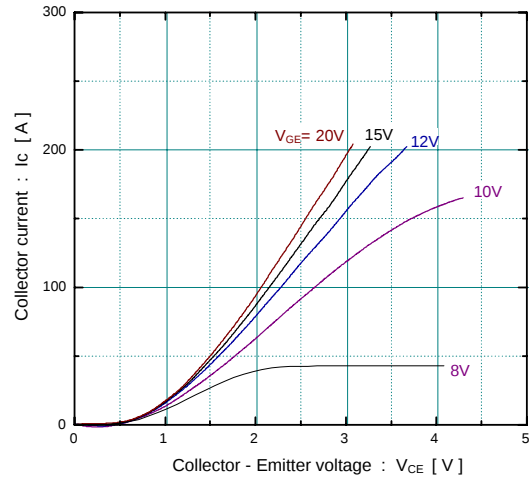


Fig.2 Collector current vs. Collector-Emittter voltage
 $T_j = 125^\circ\text{C}$ (typ.)

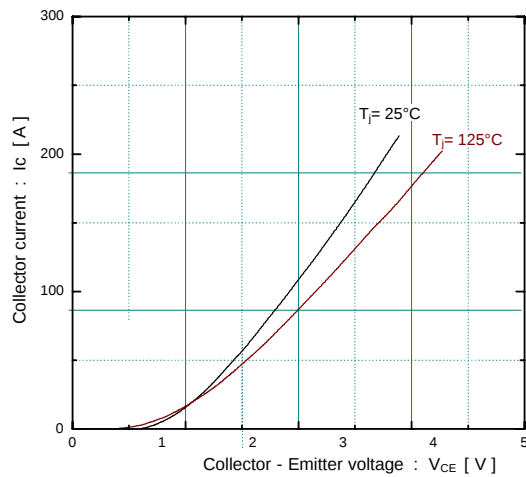


Fig.3 Collector current vs. Collector-Emittter voltage
 $V_{GE} = 15\text{V}$ (typ.)

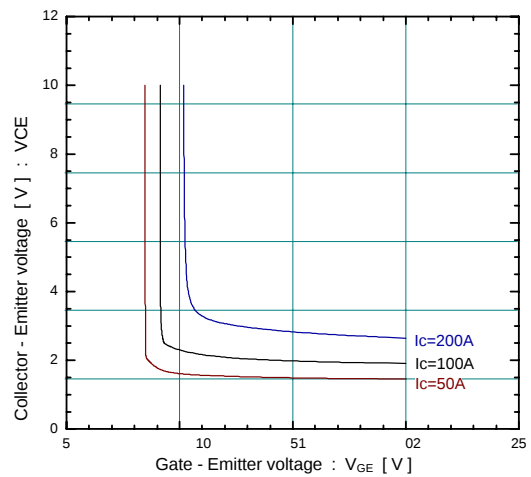


Fig.4 Collector-Emittter voltage vs. Gate-Emittter voltage
 $T_j = 25^\circ\text{C}$ (typ.)

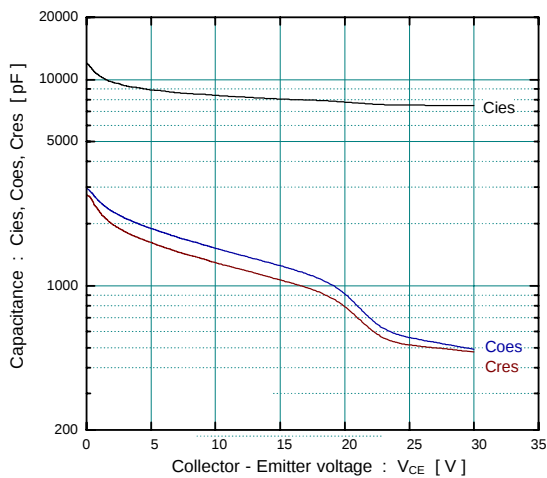


Fig.5 Capacitance vs. Collector-Emittter voltage (typ.) $V_{GE} = 0\text{V}$, $f = 1\text{MHz}$, $T_j = 25^\circ\text{C}$

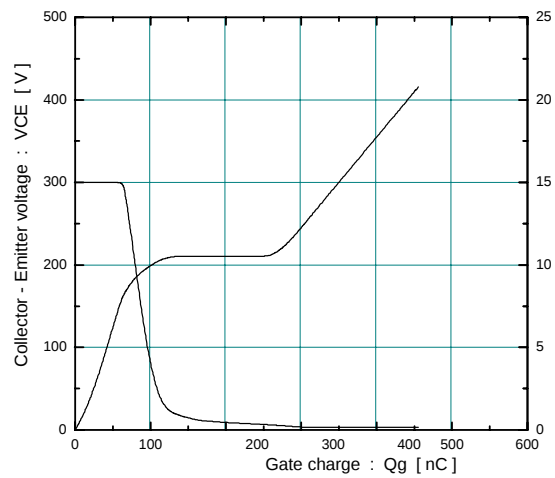


Fig.6 Dynamic Gate charge (typ.)
 $V_{CC} = 300\text{V}$, $I_C = 100\text{A}$, $T_j = 25^\circ\text{C}$

Sirectifier®

SG100T60S SG100T60DS

Discrete IGBTs

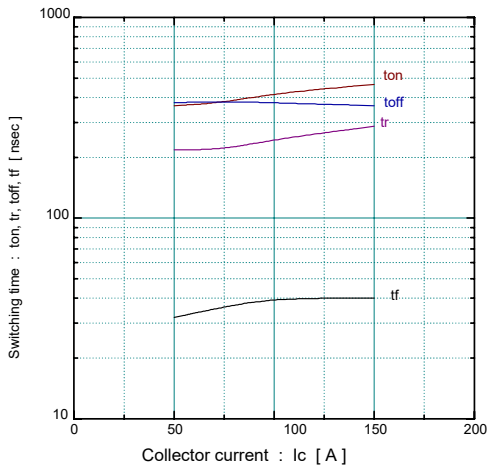


Fig.7 Switching time vs. Collector current
(typ.) $V_{cc}=300V$, $V_{GE}=\pm 15V$, $R_g=33\Omega$, $T_j=25^\circ C$

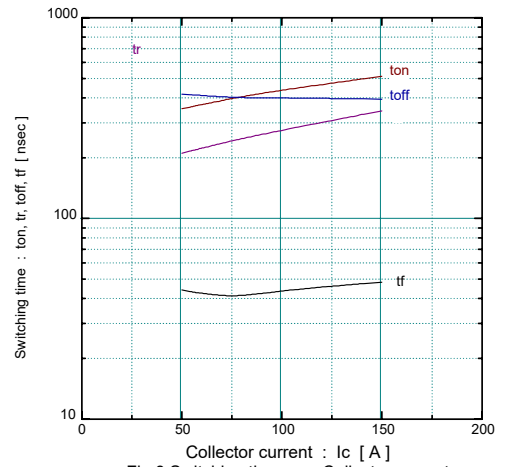


Fig.8 Switching time vs. Collector current
(typ.) $V_{cc}=300V$, $V_{GE}=\pm 15V$, $R_g=33\Omega$, $T_j=125^\circ C$

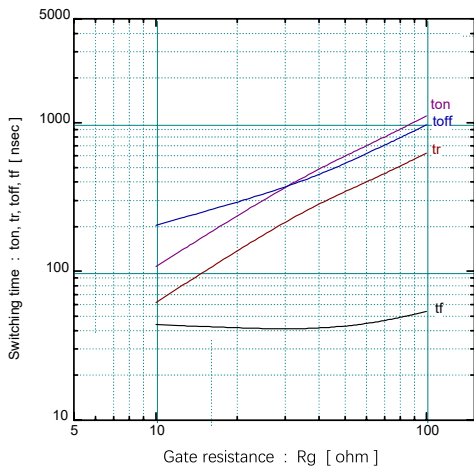


Fig.9 Switching time vs. Gate resistance (typ.)
 $V_{cc}=300V$, $I_c=100A$, $V_{GE}=\pm 15V$, $T_j=25^\circ C$

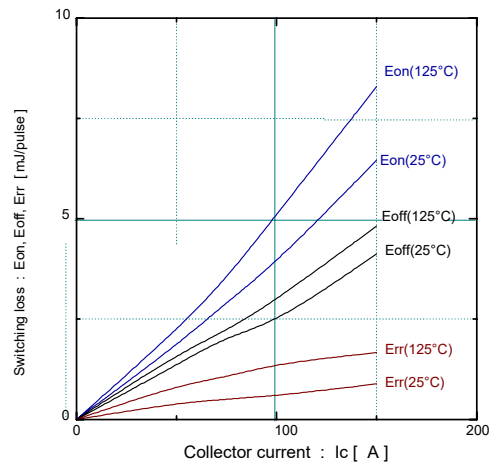


Fig.10 Switching loss vs. Collector current (typ.)
 $V_{cc}=300V$, $V_{GE}=\pm 15V$, $R_g=33\Omega$

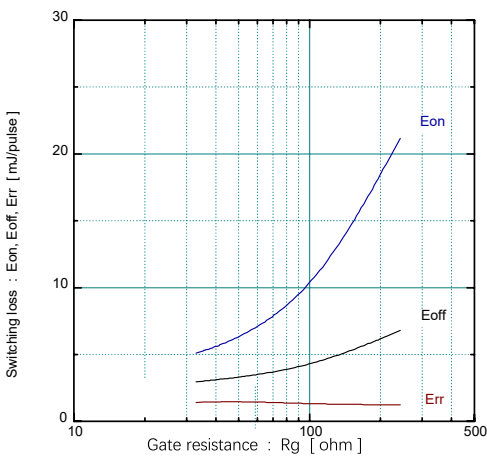


Fig.11 Switching loss vs. Gate resistance (typ.)
 $V_{cc}=300V$, $I_c=100A$, $V_{GE}=\pm 15V$, $T_j=125^\circ C$

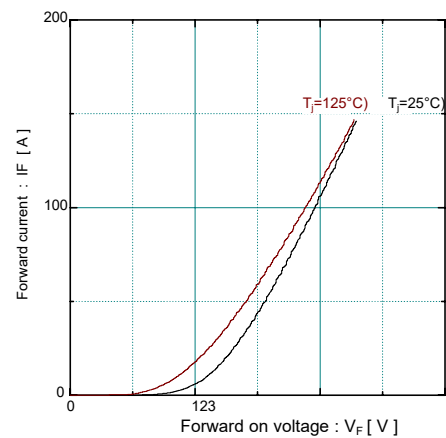
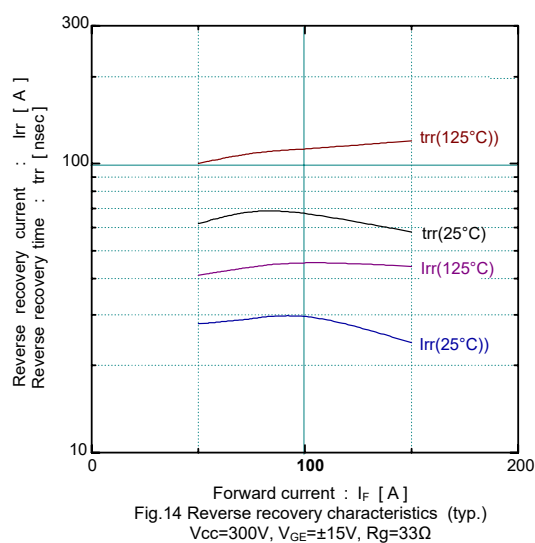
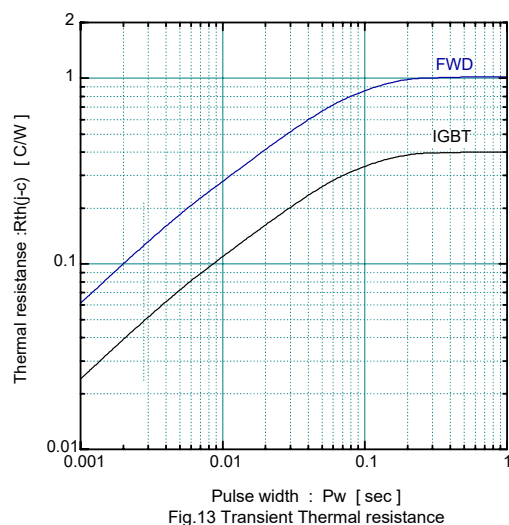


Fig.12 Forward current vs. Forward on voltage (typ.)

Sirectifier®

SG100T60S SG100T60DS

Discrete IGBTs



ORDERING INFORMATION

Part Number	Package	Shipping	Marking Code
SG100T60S	SOT-227	10pcs / Tube	SG100T60S
SG100T60DS	SOT-227	10pcs / Tube	SG100T60DS

Sirectifier®