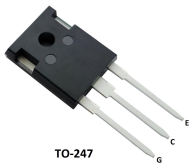
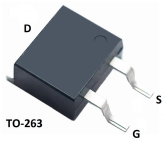
Features

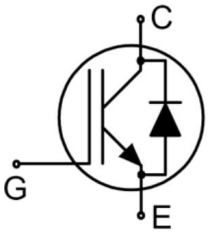
- Low gate charge
- FS Technology
- saturation voltage:
  VCE(sat), typ = 2.2V @
  IC = 15A and TC = 25° C
- RoHS product





Applications

- General purpose inverters
- Induction heating(IH)
- UPS



Absolute Ratings（Tc=25℃）

Parameter	Symbol		Value	Unit
Collector-Emmiter Voltage	V_{CES}		1200	V
*Collector Current-continuous	Ic	T=25℃	30	A
		T=100℃	15	A
Collector Current-pulse(note 1)	I_{CM}		40	A
Diode Continuous forward current	I_F	T=100℃	15	A
Diode Maximum Forward Current (Note 1)	I_{FM}		40	A
Gate-Emmiter Voltage	V_{GES}		±30	V
Power Dissipation(TO-247)	P_D	T_C=25℃	125	W
Power Dissipation(TO-263)	P_D	T_C=25℃	182	W
Operating Temperature Range	T_J		-55~+150	℃
Storage Temperature Range	T_{STG}		-55~+150	℃
Maximum Lead Temperature for Soldering Purposes	T_L		300	℃

*Collector current limited by maximum Junction temperature

Electrical Characteristic(TC=25℃ unless otherwise noted)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Off-Characteristics						

Collector-Emmiter Voltage	BV_{CES}	I_C=500μA,V_{GE}=0V	1200	-	-	V
Zero Gate Voltage Collector Current	I_{CES}	V_{CE}=1200V,V_{GE}=0V, T_C=25℃	-	-	0.2	mA
		T_C=100℃	-	-	2	mA
Gate-body leakage current,reverse	I_{GESR}	V_{CE}=0V,V_{GE}=-20V	-	-	-100	nA
On-Characteristics						
Gate-Emmiter Threshold Voltage	$V_{GE(th)}$	VCE=VGE, Ic=600uA	4.5	-	6.5	V
Short Collector Current [2]	I_{CSC}	V_{GE}=15V,V_{CE}=600V, Tsc<10μS,T_C=25℃	-	80	-	A
Collector-Emmiter saturation Voltage	V_{CESAT}	V_{GE}=15V,I_C=15A, T_C=25℃	-	2.2	2.5	V
		T_C=125℃	-	2.4	-	V
		T_C=150℃	-	2.5	-	V
Dynamic Characteristics						
Input capacitance	Cies	VCE=25V, VGE=0V, f=1.0MHZ,	-	1030	1800	pF
Output capacitance	Coes		-	80	120	pF
Reverse transfer capacitance	Cres		-	50	100	pF
Total Gate Charge	Qg	VCC=600V,IC=15A, VGE=15V [3,4]	-	70	-	nC
Switching Characteristics						
Turn-On delay time	t_d(on)	V_{CE}=600V,Ic=15A, R_G=10Ω,Inductive load Tc=25℃	-	80	-	ns
Turn-On rise time	t_r		-	65	-	ns
Turn-off delay time	t_d(off)		-	180	-	ns
Turn-off Fall time	t_f		-	80	-	ns
Turn-on energy	E_{on}		-	2.2	-	mJ
Turn-off energy	E_{off}		-	1.1	-	mJ
Total switching Energy	E_{tot}		-	3.2	-	mJ
Anti-Paraller Diode Characteristics and Maximum Ratings						
Diode Forward Voltage	V_F	V_{GE}=0V,I_F=15A.	-	1.8	2.9	V
Diode Reverse recovery time	t_{rr}	V_{GE}=0V,V_R=800V, I_F=15A dI_F/dt=750A/us [4]	-	200	-	ns
Reverse recovery charge	Q_{rr}		-	1.1	-	μC

Thermal Characteristics

Symbol	Parameter	Max		Units
		TO-247	TO-263	
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to case	2	0.82	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance, Junction to Ambient	48	62.5	℃/W

Notes:

1：Pulse width limited by maximum junction temperature

2：Allowed number of short circuits: <1000; time between short circuits: >1s.

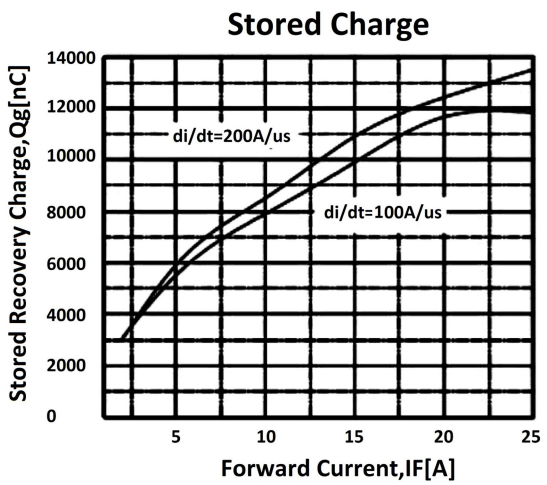
3：Pulse Test：Pulse Width ≤300μs,Duty Cycle≤2%

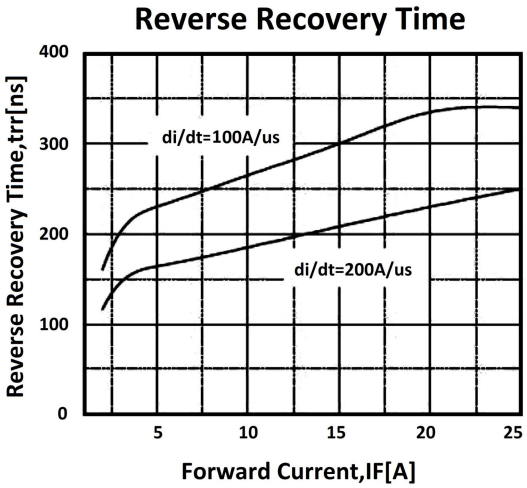
4：Essentially independent of operating temperature

Order Message

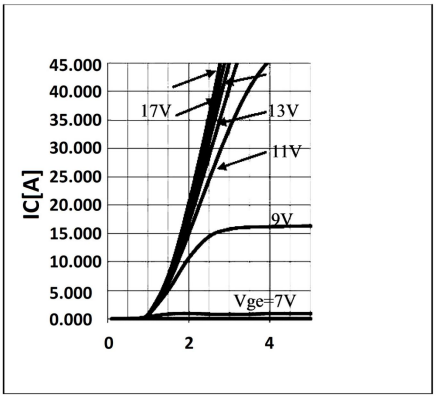
Marking	Package
SL15T120FL	TO-247
SL15T120K	TO-263

Electrical Characteristics(curves)

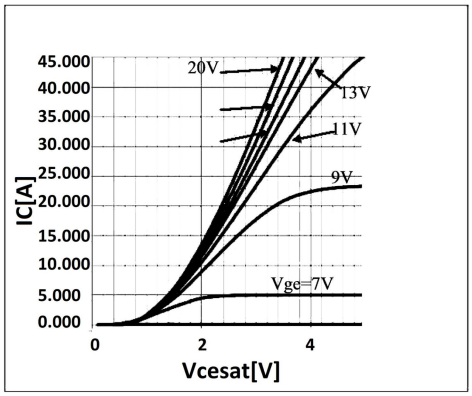




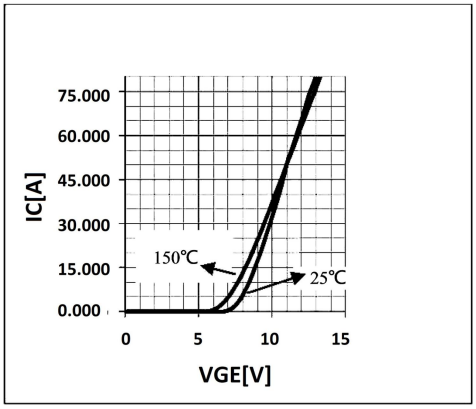
Typical Output Characteristics, Tj= 25 ℃



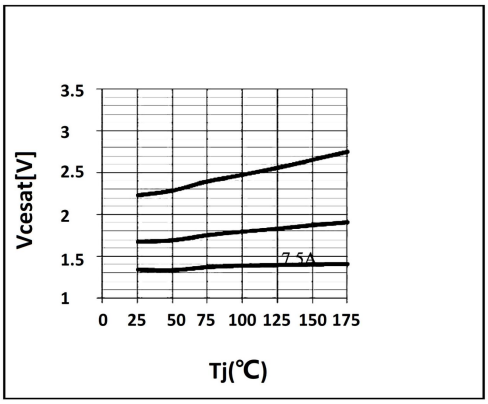
Typical Output Characteristics, Tj=150℃



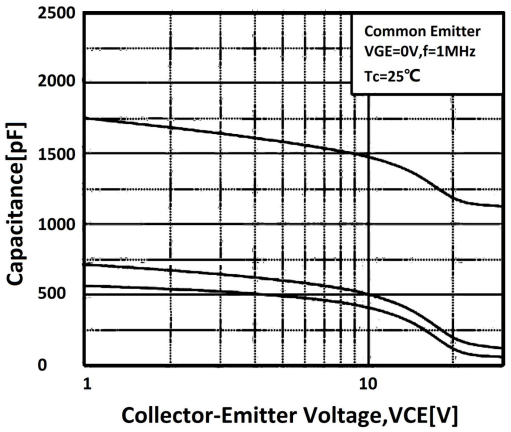
Typical Saturation Voltage Characteristics



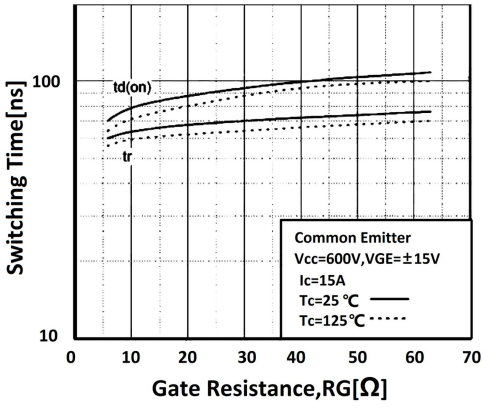
Saturation Voltage vs. Case Temperature at Vaiant Current Level



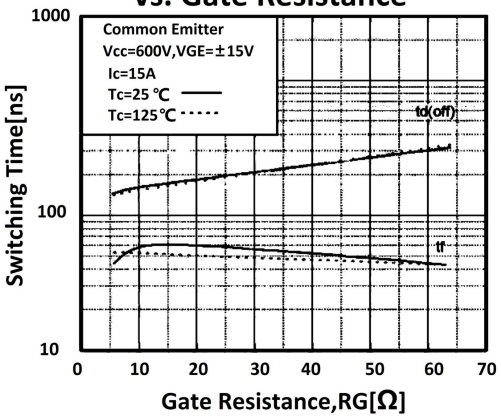
Capacitance Characteristics



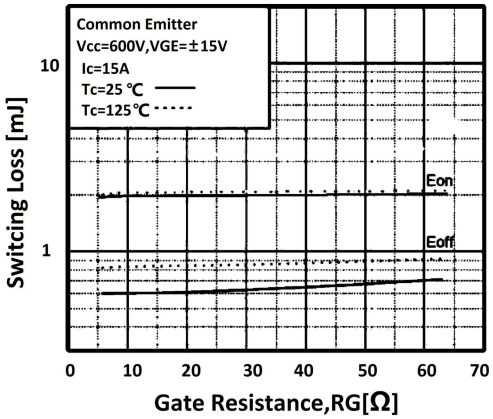
Turn-On Characteristics vs. Gate Resistance



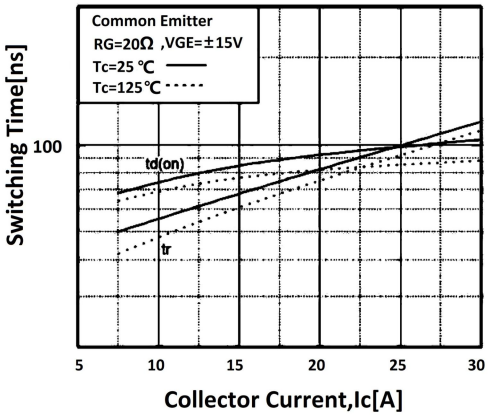
Turn- off Characteristics vs. Gate Resistance



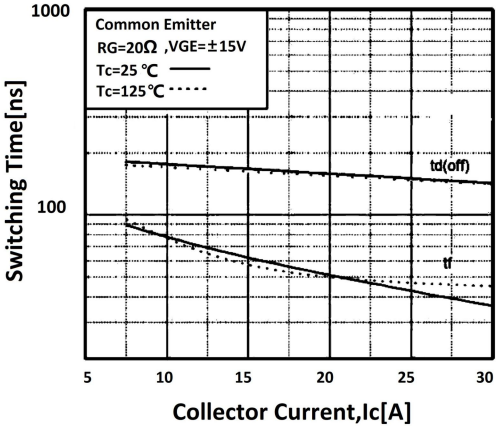
Switching Loss vs. Gate Resistance



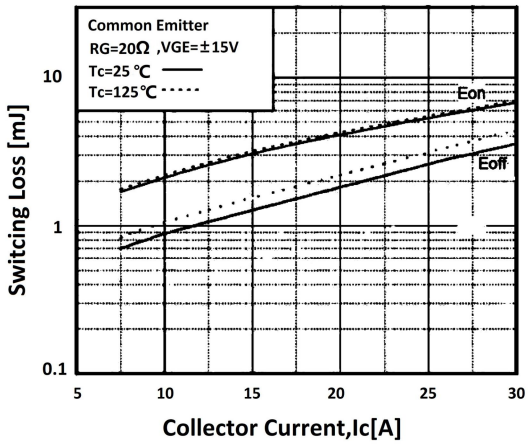
Turn- On Characteristics vs. Collector Current



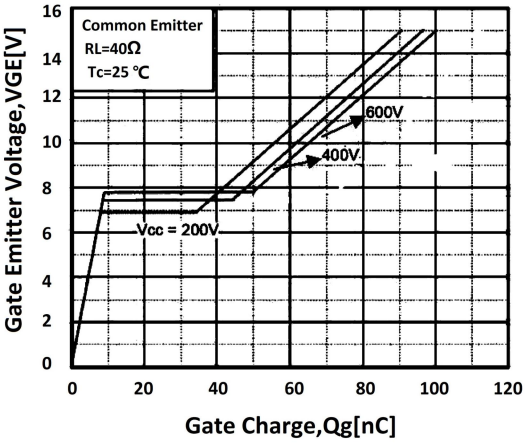
Turn- off Characteristics vs. Collector Current



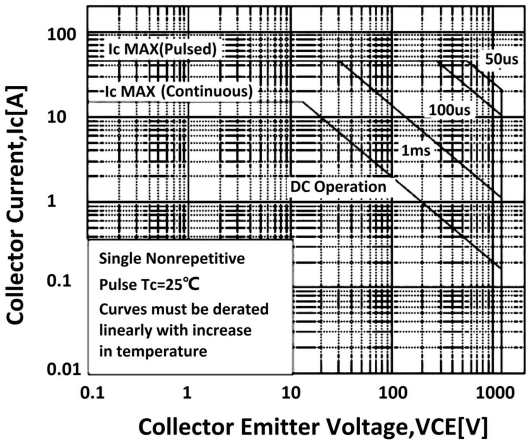
Switching Loss vs. Collector Current



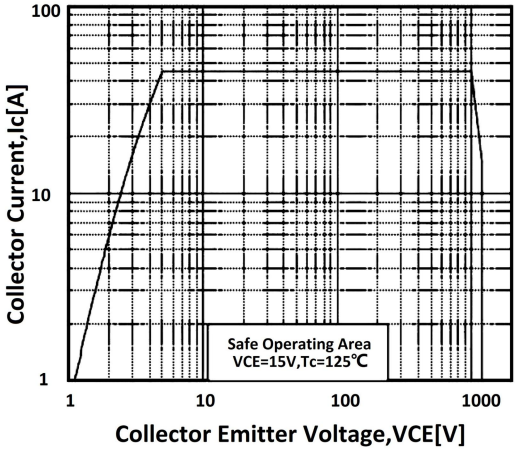
Gate Charge Characteristics



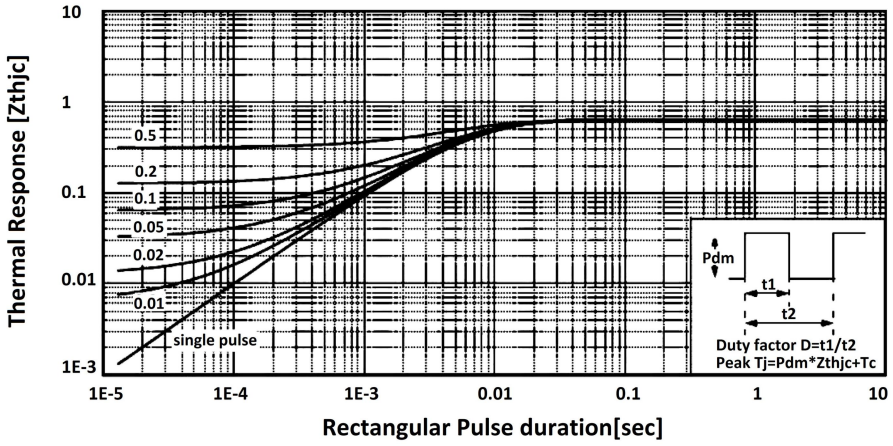
SOA Characteristics



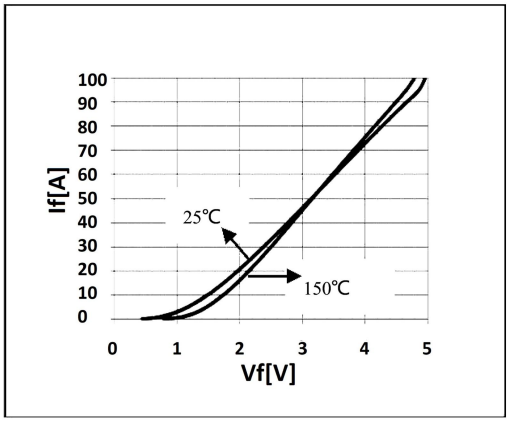
Turn-Off SOA



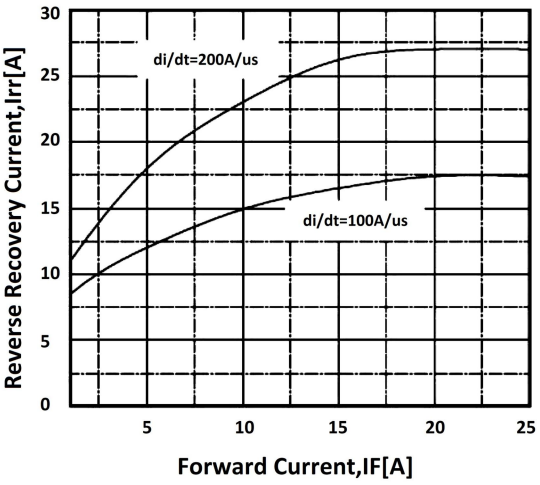
Transient Thermal Impedance



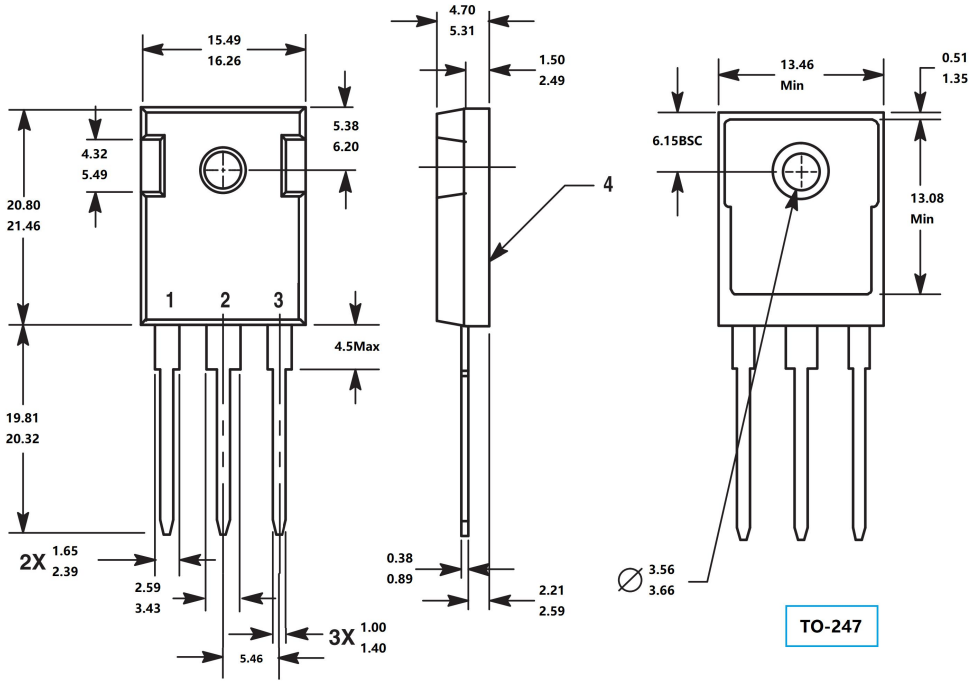
Forward Characteristics

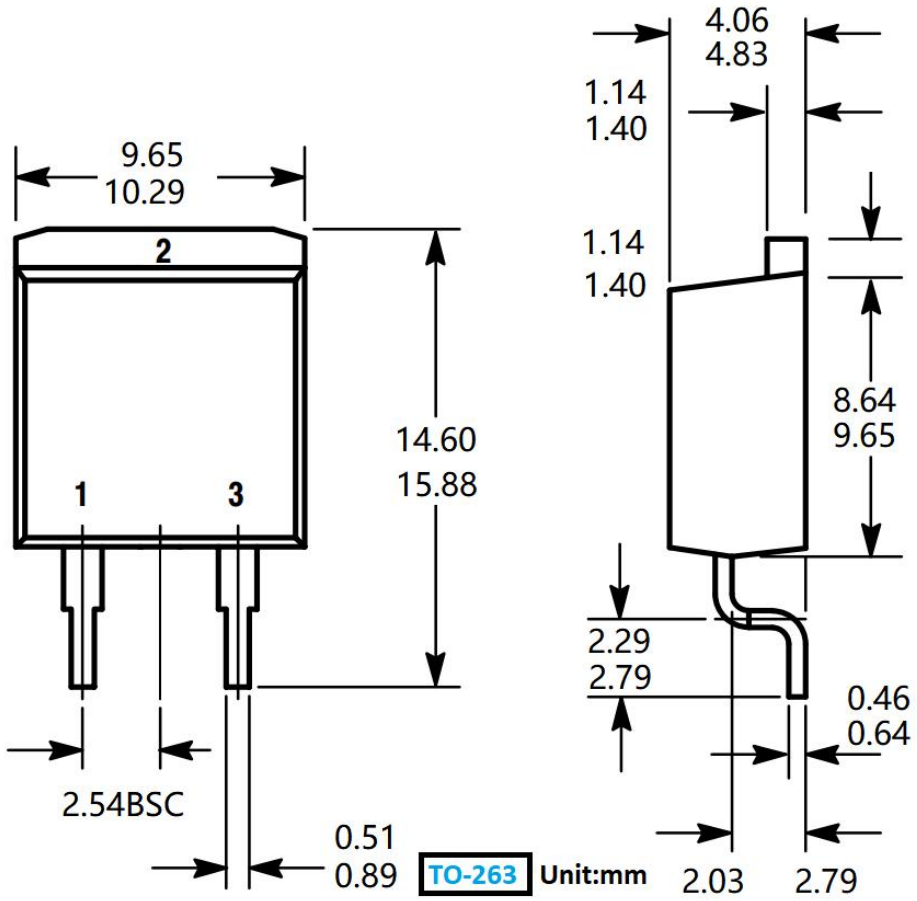


Reverse Recovery Current



Package Mechanical DATA





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