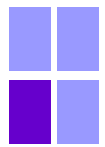


IGBT Selection Guide

- Punch Through IGBTs
- Field Stop IGBTs

All information in this guide is as of the date of publication.
Please make sure that you are using the latest version of the guide.
If you need more product information, please refer to our data sheets.
<https://www.sanken-ele.co.jp/en>

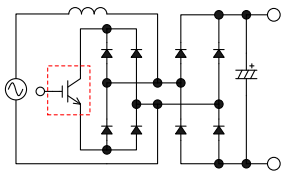


SanKen provides the low saturation voltage type and the high speed type IGBTs. You can select an optimal IGBT according to your application.

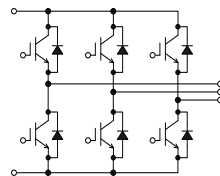
	FGM62xS → p.3	MGD623x → p.4	DGU → p.5
Feature	Low Saturation Voltage	Low Saturation Voltage	Low Saturation Voltage
$V_{CE(sat)}$	to 1.7 V	to 1.8 V	to 1.4 V
Operation Frequency	to 20 kHz	to 20 kHz	to 1 kHz
Fast Recovery Diode	—	Built-in	—
Short Circuit Withstand Time	—	—	—
Application	<ul style="list-style-type: none"> • Partial Switching PFC (Air conditioner) 	<ul style="list-style-type: none"> • Partial Switching PFC (Air conditioner) • Inverter Circuit • Bridge Circuit • IH 	<ul style="list-style-type: none"> • Ignition Coil Driver Circuits

<Circuit Example>

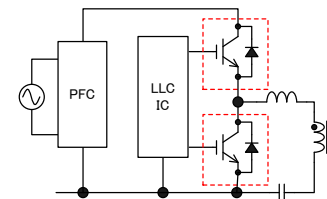
➤ Partial Switching PFC



➤ Inverter



➤ Half Bridge Circuit



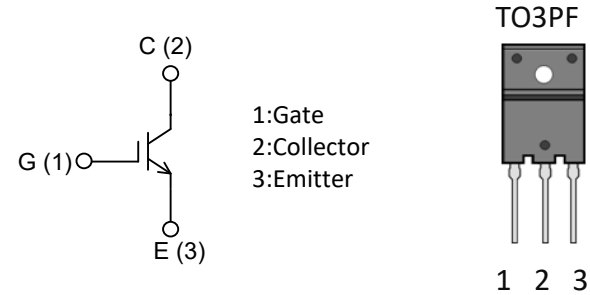
FGM62xS Series

Features

- Low Saturation Voltage (to 1.7 V)

Application

- Partial Switching PFC for Air Conditioner
- PFC Circuit of Air Conditioner and Lighting, etc.



Part Number	Package	V_{CES}	I_C		$I_{C(PULSE)}$ $T_C = 25\text{ }^\circ\text{C}$	$V_{CE(sat)}$ (typ.)	t_f (typ.)	
			$T_j = 25\text{ }^\circ\text{C}$	$T_j = 100\text{ }^\circ\text{C}$			$T_j = 25\text{ }^\circ\text{C}$	$T_j = 125\text{ }^\circ\text{C}$
FGM622S	TO3PF	600 V	25 A	16 A	75 A	1.7 V	120 ns	200 ns
FGM623S			30 A	18 A	100 A	1.5 V	120 ns	200 ns

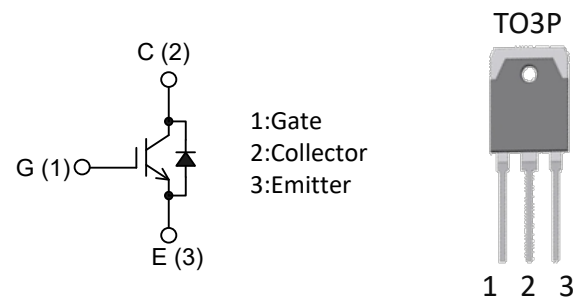
MGD623x Series

Features

- Low Saturation Voltage (to 1.8 V)
- Built-in a First Recovery Diode (to 1.2 V, to 300 ns)

Application

- IH
- PFC Circuit of Air Conditioner and Lighting
- Inverter
- Bridge Circuit , etc.



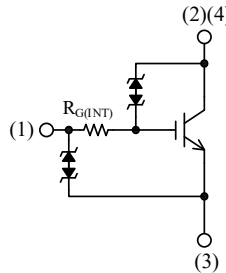
Part Number	Package	V_{CES}	I_C		$I_{C(PULSE)}$ $T_C = 25\text{ }^\circ\text{C}$	$V_{CE(sat)}$ (typ.)	t_f (typ.)		V_F (typ.)	t_{rr} (typ.) $T_J = 25\text{ }^\circ\text{C}$
			$T_J = 25\text{ }^\circ\text{C}$	$T_J = 100\text{ }^\circ\text{C}$			$T_J = 25\text{ }^\circ\text{C}$	$T_J = 125\text{ }^\circ\text{C}$		
MGD623N	TO3P	600 V	50 A	37 A	100 A	1.7 V	200 ns	350 ns	1.2 V	300 ns
MGD623S						1.8 V	120 ns	200 ns		

DGU Series

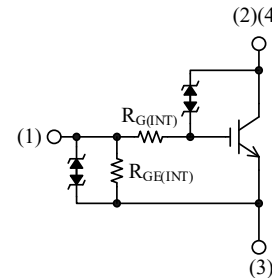
Features

- AEC-Q101 Qualified
- Low Saturation Voltage (to 1.4 V)
- Built-in Zener Diodes
- Built-in Gate Resistors

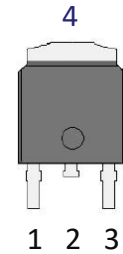
DGU4015G



DGU4x20GR



TO252



- 1:Gate
- 2:Collector
- 3:Emitter
- 4:Collector

Application

- Ignition Coil Driver Circuits

Part Number	Package	$V_{(BR)CES}$ (typ.)	I_C (max.)	$V_{CE(sat)}$ (typ.)	V_{GE} (max.)	E_{SCIS} (max.)	$V_{GE(TH)}$ (typ.)	$R_{G(INT)}$ (typ.)	$R_{GE(INT)}$ (typ.)
DGU4015G	TO252	400 V	15 A	1.4 V	±10 V	150 mJ	1.80 V	70 Ω	—
DGU4020GR*		400 V	20 A	1.1 V		320 mJ	1.75 V		47 kΩ
DGU4520GR*		450 V	20 A	1.1 V		300 mJ	1.75 V		47 kΩ

*AEC-Q101 Qualified

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