



Working Together for a Greener Society

Future of Power Electronics and the Earth



400 V to 500 V/ 15 A to 20 A IGBTs for Igniter

DGU Series

■ Description

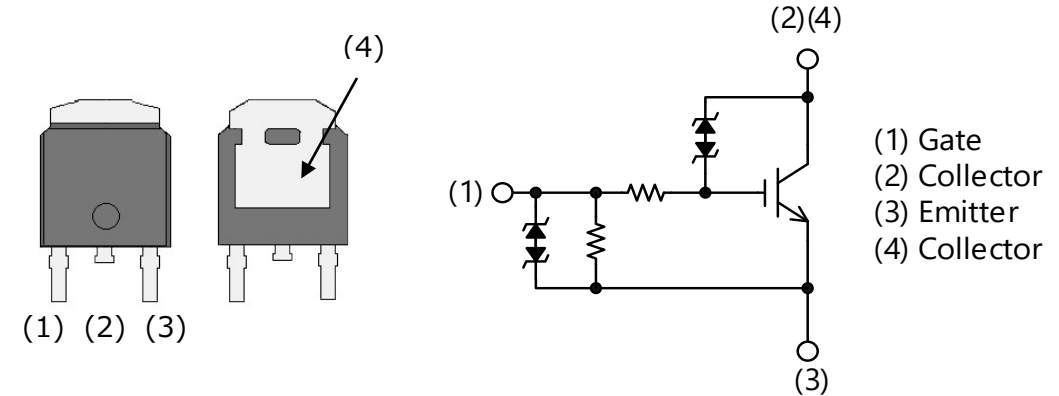
- IGBT with collector-to-gate Zener diodes and gate resistors
- $V_{(BR)CES}$: 400 V to 500 V
- I_C : 15 A to 20 A
- Automotive-grade Qualified
- Bare Lead Frame: Pb-free (RoHS Compliant)
- Compact Surface-mount Package: TO252
- Low Saturation Voltage
- High Self-clamped Inductive Switching Energy (E_{SCIS})
- AEC-Q101 Qualified

■ Application

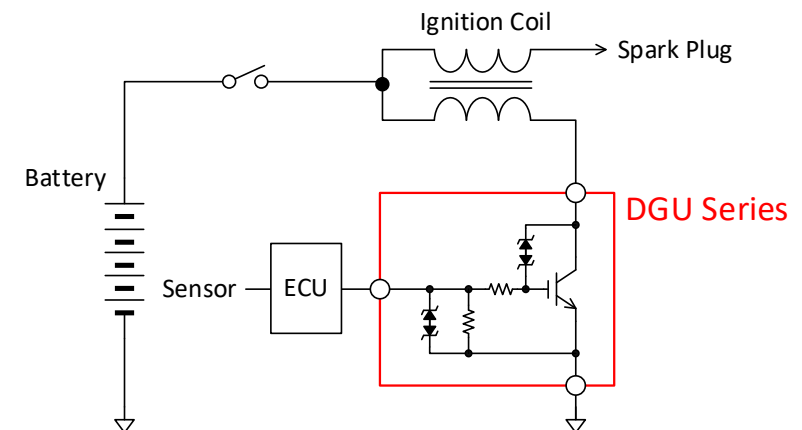
- Ignition Coil Drive Circuit

■ Package

TO252 (6.4 mm × 10 mm)

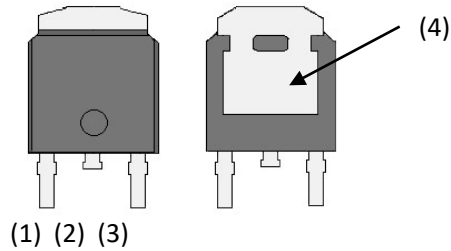


■ Typical Application

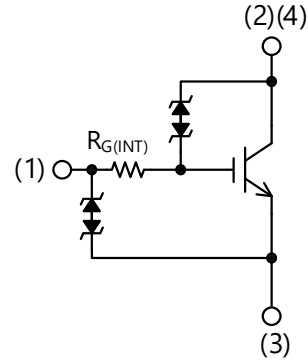


■ Package

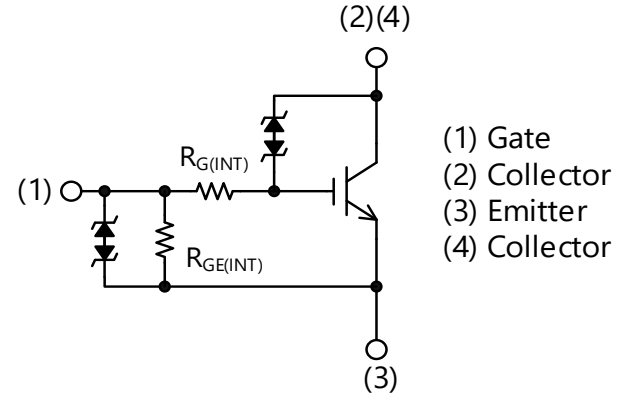
TO252 (6.4 mm × 10 mm)



DGU4015G



DGUxx20GR



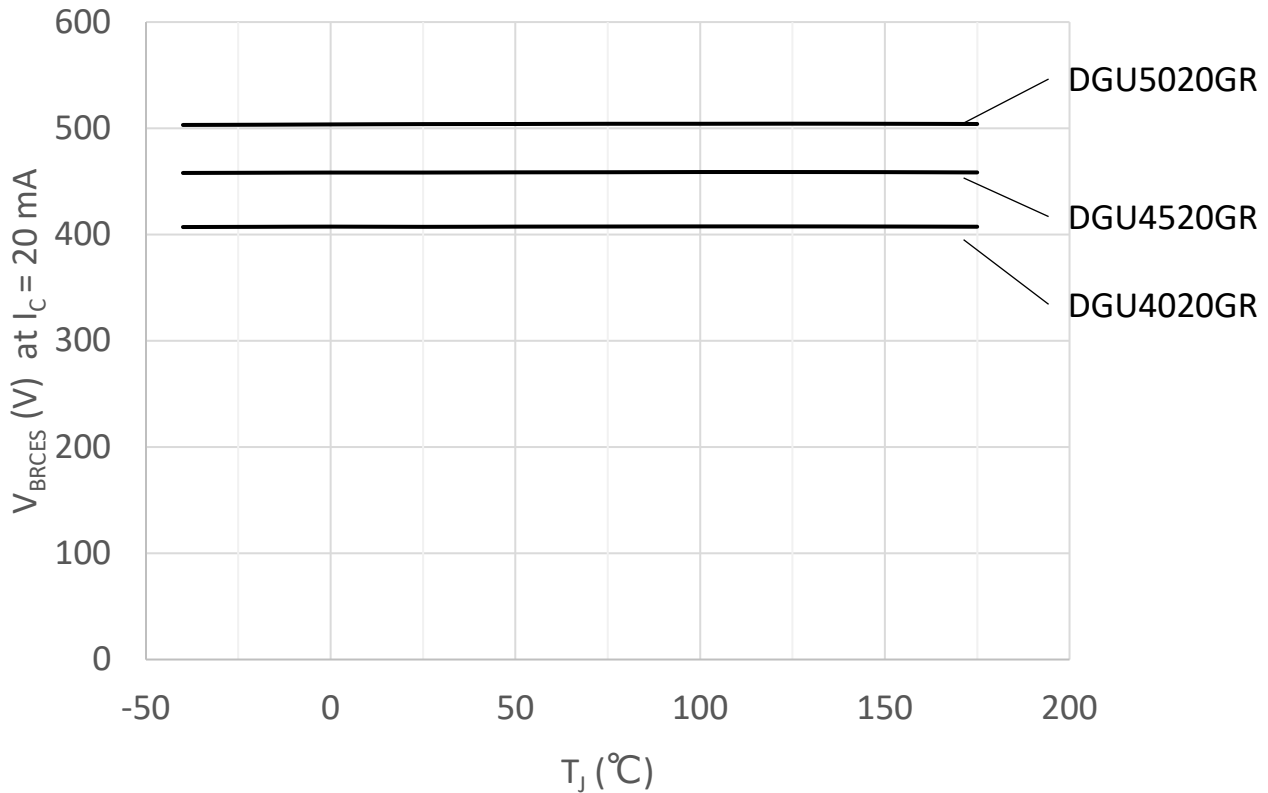
- (1) Gate
- (2) Collector
- (3) Emitter
- (4) Collector

■ Selection Guide

*AEC-Q101 Qualified

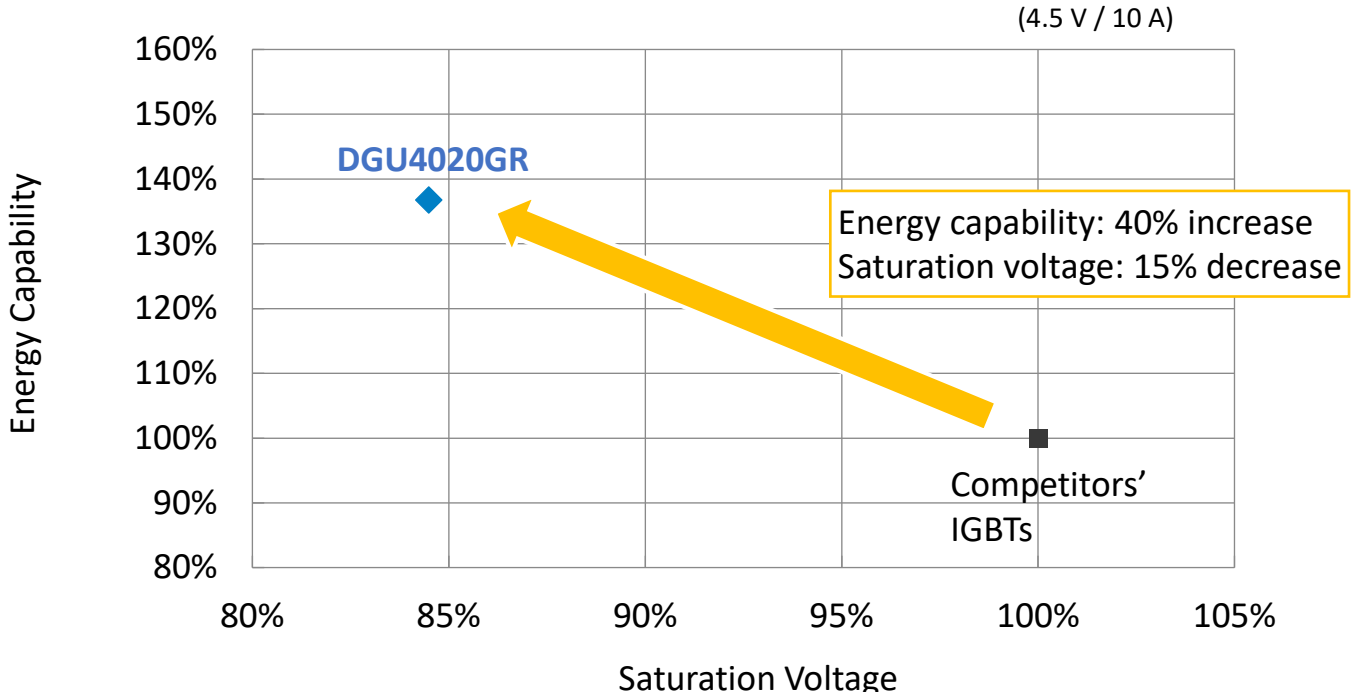
Part Number	$V_{(BR)CES}$ (typ.)	I_C	$V_{CE(SAT)}$ (max.)	$V_{GE(TH)}$	E_{SCIS}	$R_{G(INT)}$	$R_{GE(INT)}$	T_J
DGU4015G	400 V	15 A	1.70 V	1.4 to 2.2 V	150 mJ	70 Ω	—	175 $^{\circ}C$
DGU4020GR*	400 V	20 A	1.32 V	1.4 to 2.1 V	320 mJ	70 Ω	47 k Ω	175 $^{\circ}C$
DGU4520GR*	450 V	20 A	1.32 V	1.4 to 2.1 V	300 mJ	70 Ω	47 k Ω	175 $^{\circ}C$
DGU5020GR*	500 V	20 A	1.40V	1.4 to 2.1 V	280 mJ	70 Ω	47 k Ω	175 $^{\circ}C$

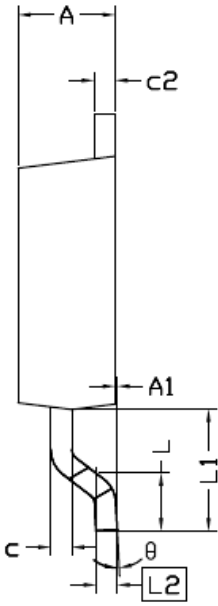
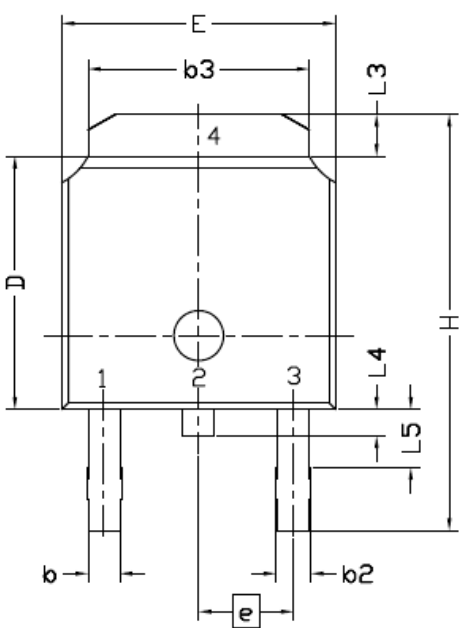
The DGU series can maintain an extremely stable voltage in the entire temperature range (-40 °C to 175 °C). Even in applications where the temperature varies over a wide range, such as in an engine compartment, this series can maintain the primary voltage at a specified voltage, allowing the secondary voltage to be stable. This stabilizes the ignition operation of the engine.



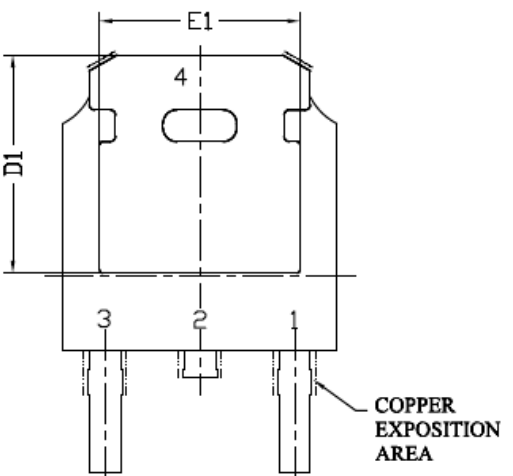
The DGU series improves a trade-off between energy capability and saturation voltage. This achieves IGBTs with lower saturation voltage while maintaining high self-clamped inductive switching energy (E_{SCIS}).

DGU4020GR Energy Capability Comparison





SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
E	6.40	6.60	6.731
L	1.40	1.52	1.77
L1	2.743 REF		
L2	0.508 BSC		
L3	0.89	--	1.27
L4	0.64	--	1.01
L5	--	--	--
D	6.00	6.10	6.223
H	9.40	10.00	10.40
b	0.64	0.76	0.88
b2	0.77	0.84	1.14
b3	5.21	5.34	5.46
e	2.286 BSC		
A	2.20	2.30	2.38
A1	0	--	0.127
c	0.46	0.50	0.60
c2	0.46	0.50	0.58
D1	5.21	--	--
E1	4.40	--	--
θ	0°	--	10°



- NOTES:**
- Dimensions in millimeters
 - Bare lead frame: Pb-free (RoHS compliant)

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