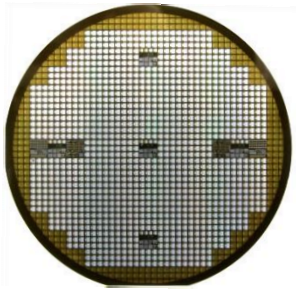
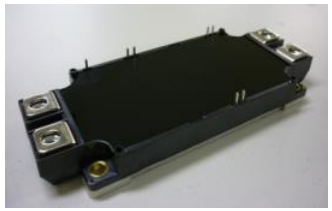
Ignition IGBTs

ROHM's Power Devices

ROHM's power item lineup covers wafers/bare dies, discrete packages, module, ICs and Intelligent Power Modules



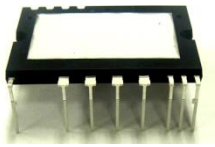


Power Module

Case type
(Full SiC Module)
Mold type
IPM etc…

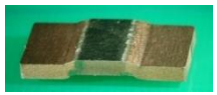
Discrete

TO220
TO247/3PF
D-Pak / D2-Pak
etc…



Device

SiC (SBD/MOSFET)
IGBT
Hybrid MOS
Super Junction MOSFET
FRD
SBD
Shunt Resistor



ICs

Gate driver
Temperature/High Voltage monitor
ACDC etc…

ROHM's Power Devices (High Breakdown Voltage items)

ROHM has Silicon based Super Junction MOSFETs / Hybrid MOS, FRDs and IGBTs.
SiC devices cover Schottky diodes and MOSFETs

Material	Si				SiC	
Item	Super Junction MOSFET	Hybrid MOS	FRD	IGBT	SBD	MOSFET
Breakdown Voltage	500V ~800V	600V*	300V ~600V, ~1200V*	430V ~650V, ~1200V*	650V, 1200V, 1700V*	650V, 1200V, 1700V*

*Under development

The table shows a product development plan as of today and is subject to change without notice.

As of Mar 11, 2014

IGBT Lineup

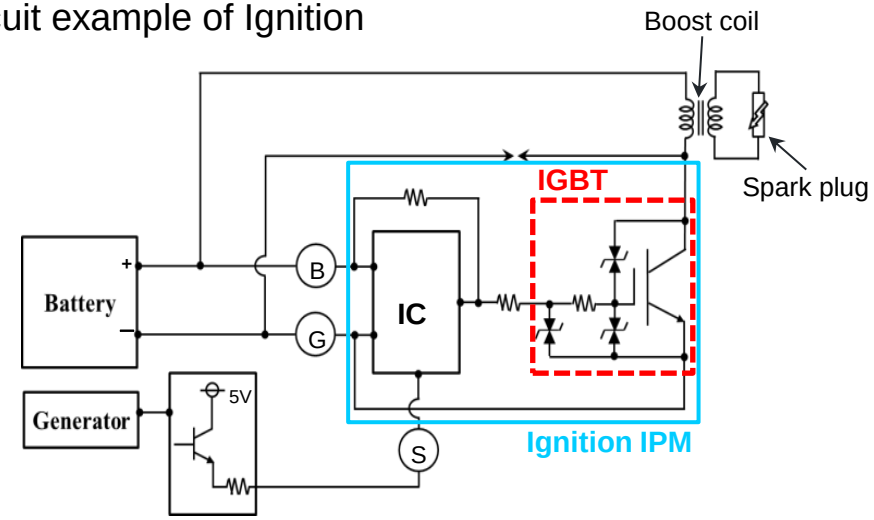
*Under development

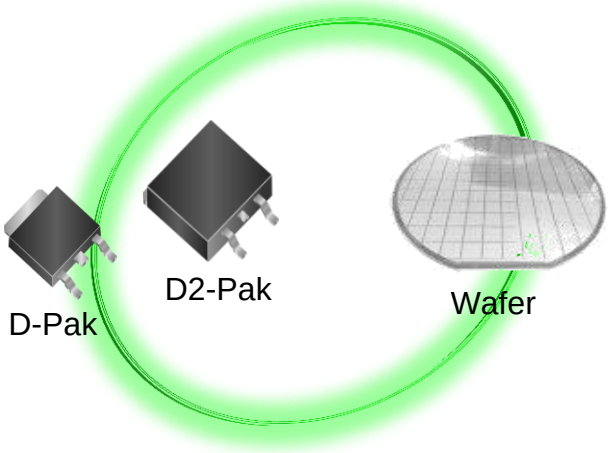
Item	Low VCE(sat) and High speed SW type (tf 50ns typ.)		Low VCE(sat) and SCSOA guaranteed type		Low VCE(sat) type	SCIS guaranteed type	Low VCE(sat) and SCSOA guaranteed type
Application	Converter		Inverter		Home Appliance	**Igniter**	EV / HEV
Series Name	RGTH series	RGW series (Next Gen.)	RGT series	RGS series (Next Gen.)	RGCL series	**RGPx series**	-
Breakdown Voltage	650V	650V * 1200V *	650V	650V * 1200V *	600V *	430V 560V *	600V * 1200V *
Short Circuit Withstand Time	-	-	5μsec	8~10μsec	-	-	8~10μsec
VCE(sat) typ.	1.6V	-	1.65V	-	1.4V	1.3V	-
Status	On MP	Under Development	On MP	Under Development	DS OK	430V CS OK 560V DS OK	650V/200A DS OK

The table shows a product development plan as of today and is subject to change without notice.

Ignition IGBT <RGPx-Series>

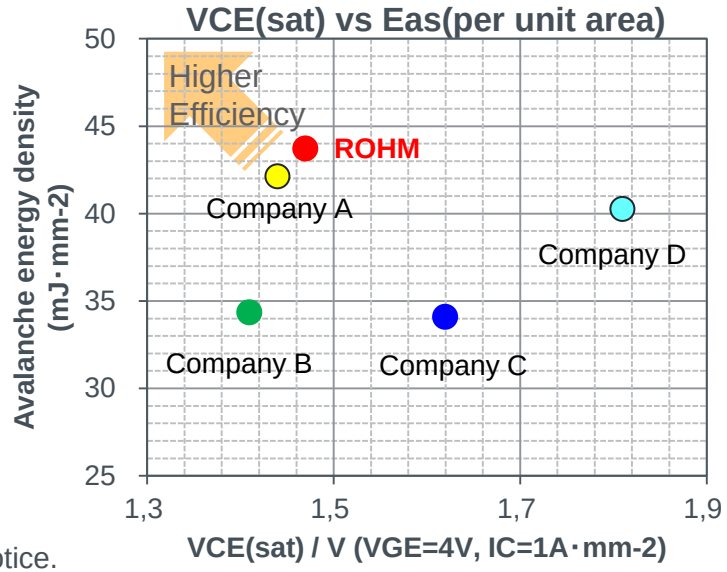
■ Circuit example of Ignition





■ Feature

- Package：D-Pak
- BV_{CES}=430±30V
- Low Saturation Voltage
  VCE(sat)=1.3Vtyp.@Ic=4A,VGE=4.5V
- Avalanche Energy：guaranteed 250mJ(Tj=25℃)
- Built-in ESD protection Diode for Gate
- Built-in Resistor between Gate and Emitter (Option)
- Based upon AEC-Q101



This is development plan, so it might be changed target specification without notice.

Ignition IGBT <RGPx-Series>

■ Lineup

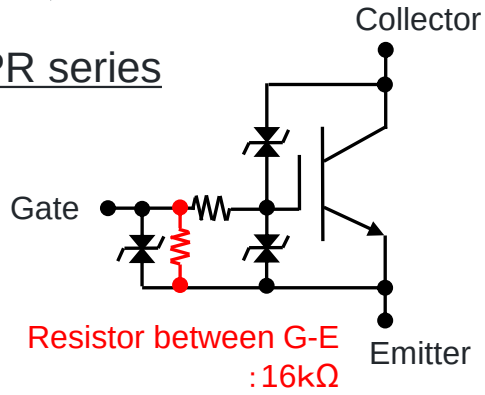
Item	Package	BVCES	VGE	Eas	Comment	Status
RGPZ10BM40	D-Pak	430±30V	±10V	250mJ	-	CS OK
RGPR10BM40	D-Pak	430±30V	±10V	250mJ	Built-in Resistor between G-E	CS OK
RGPZ20BM56	D-Pak	560±30V	±10V	300mJ	-	DS OK

■ **Development plan** (tentative)

		Eas(Tj=25℃)				
		200mJ	250mJ	300mJ	350mJ	
BVCES	350V	✓	✓			D-Pak
	430V	✓	✓	✓	✓	
	560V		✓	✓		D2-Pak
	600V			✓		

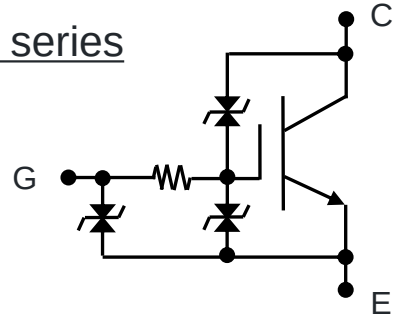
✓ Under Development

RGPR series



Resistor between G-E
:16kΩ

RGPZ series



The plan and specifications are subject to change without notice.

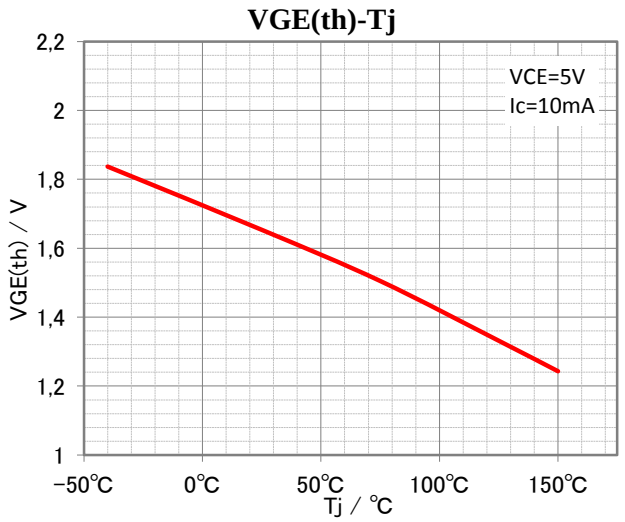
Competitor's principal items

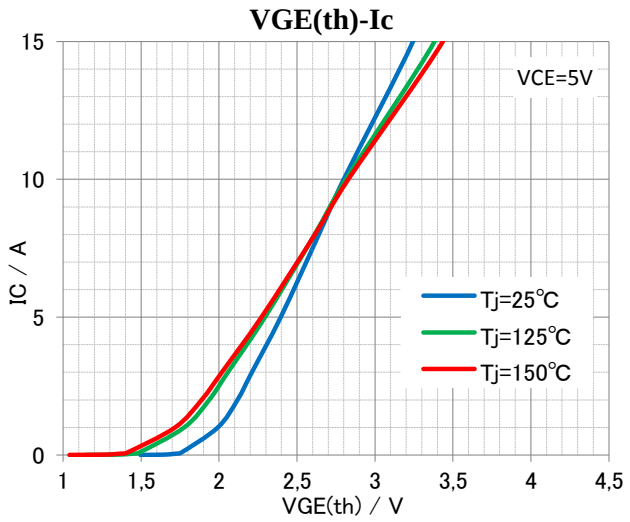
Competitor's P/N		Package	ROHM's P/N	Package	BVCES	Eas	Status
Fairchild	ISL9V5045S	D2 PAK	-	D2 PAK	450V	500mJ	under development
	FGD3440G2	D PAK	-	D PAK	400V	335mJ	under development
	FGD3040G2	D PAK	-	D PAK	400V	300mJ	under development
	ISL9V2040D	D PAK	-	D PAK	400V	200mJ	under development
			RGPR10BM40	D PAK	430V	250mJ	CS OK
	ISL9V2540S	D2 PAK	RGPR10BM40	D PAK	430V	250mJ	CS OK
	ISL9V3040D	D PAK	-	D PAK	400V	300mJ	under development
STmicro	STGD18N40LZ	D PAK	RGPR10BM40	D PAK	430V	250mJ	CS OK
	STGD20N40LZ	D PAK	-	D PAK	400V	300mJ	under development
ONsemi	NGD15N41(A)CL	D PAK	RGPR10BM40	D PAK	430V	250mJ	CS OK
	NGD18N45CLB	D PAK	-	D2 PAK	450V	500mJ	under development
	NGD8201(A)N	D PAK	RGPR10BM40	D PAK	430V	250mJ	CS OK
	NGD8205(A)N	D PAK	-	D PAK	360V	250mJ	under development
Renesas	GN4014ZB4	D2 PAK	RGPZ10BM40	D PAK	430V	250mJ	CS OK
	GN4008ZB4	D PAK	RGPZ10BM40	D PAK	430V	250mJ	CS OK
Sanken	DGG4015	D PAK	RGPZ10BM40	D PAK	430V	250mJ	CS OK
			RGPZ20BM56	D PAK	560V	300mJ	DS OK

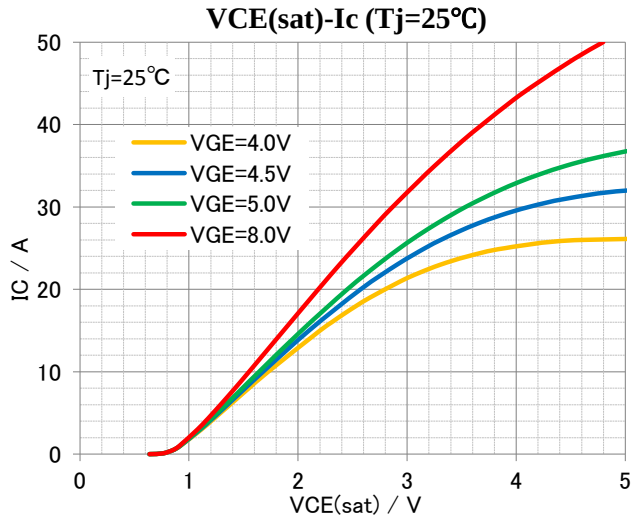
Development schedule and target specifications are subject to change without notice.

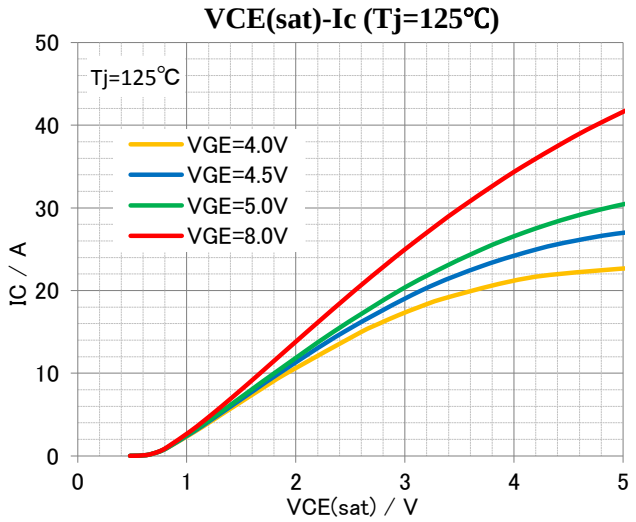
Reference date

RGPZ10BM40 Characteristics



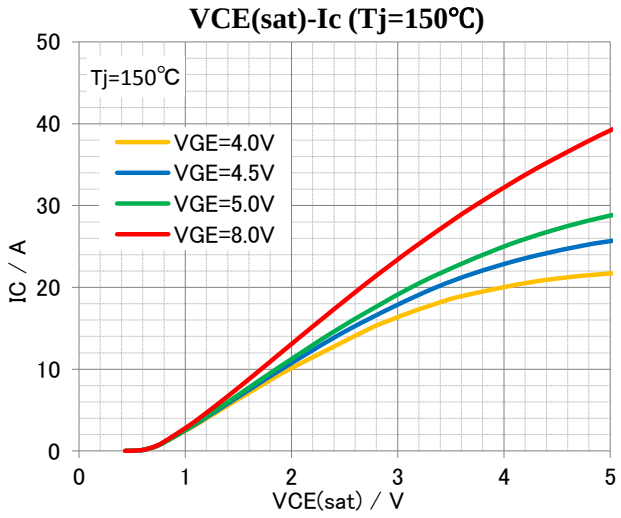


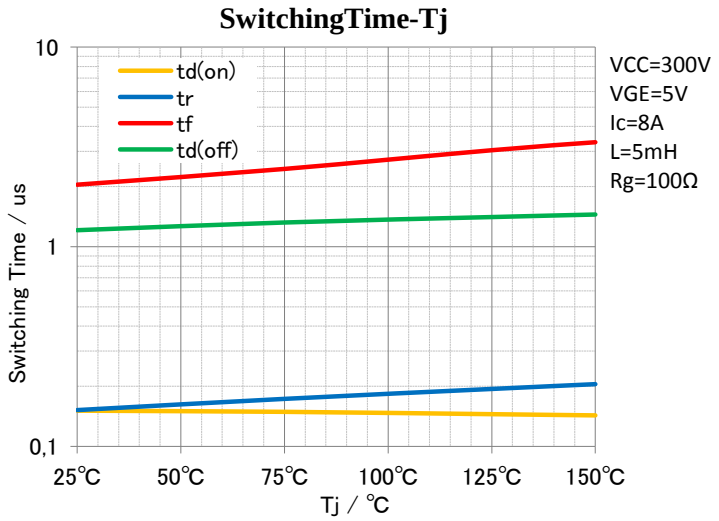


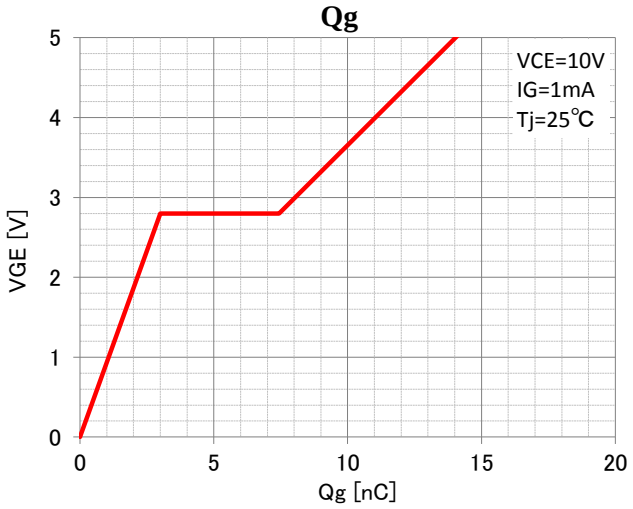


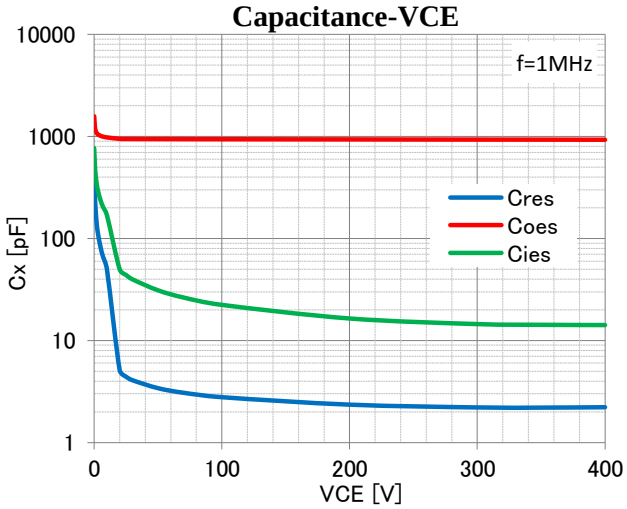
Reference date

RGPZ10BM40 Characteristics









Reference date

RGPZ10BM40 Characteristics