



Ultra Fast IGBT Modules

- SKM 400GB125D**
- SKM 400GAL125D**
- SKM 400GAR125D**

Features

- V_{fT} 1.7V (typ), V_{fT} 2.1V (max)
- t_{fT} 10ns (typ), t_{fT} 15ns (max)
- t_{rr} 100ns (typ), t_{rr} 150ns (max)
- t_{rr} 100ns (typ), t_{rr} 150ns (max)
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- t_{rr} 100ns (typ), t_{rr} 150ns (max)

SEMITRANS® 3

Ultra Fast IGBT Modules

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SKM 400GAL125D

SKM 400GAR125D

Features

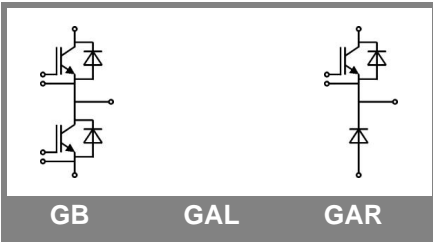
- 100% VCEsat @ IC
- High diode reverse recovery performance
- High dV/dt capability
- High switching frequency
- High thermal conductivity
- High reliability

Typical Applications*

- Inverter drives for induction motors
- DC-DC converters
- Motor drives for pumps and fans

Characteristics

Symbol	Conditions	min.	typ.	max.	Units
G ₁ D G _{C4}	Q ₁ , & D : >> 50G _{MC} D > G	8 _H D = E F4 _{L#1} %3T	=	=,E	G
		8 _H D : =E F4 _{L#1} %3T	: ,K		G
G _{1>}		8 _H D =E F4	: ,:	: ,=	G
		8 _H D : =E F4			G
\$				J,:	& X



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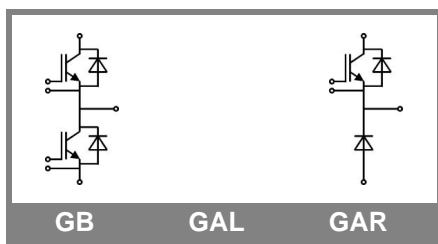
Features

- 100% V_{CE} / f_{sw} / t_{fall} / t_{rise} / t_{off} / t_{on}
- High efficiency > 98% at 100% modulation
- High diode reverse recovery speed
- High diode reverse recovery energy
- High diode reverse recovery charge
- High diode reverse recovery time
- High diode reverse recovery current
- High diode reverse recovery voltage
- High diode reverse recovery power
- High diode reverse recovery loss
- High diode reverse recovery temperature
- High diode reverse recovery humidity
- High diode reverse recovery vibration
- High diode reverse recovery shock
- High diode reverse recovery corrosion
- High diode reverse recovery salt
- High diode reverse recovery sulfur
- High diode reverse recovery ammonia
- High diode reverse recovery hydrogen
- High diode reverse recovery oxygen
- High diode reverse recovery nitrogen
- High diode reverse recovery carbon
- High diode reverse recovery silicon
- High diode reverse recovery phosphorus
- High diode reverse recovery sulfur
- High diode reverse recovery chlorine
- High diode reverse recovery bromine
- High diode reverse recovery iodine
- High diode reverse recovery cadmium
- High diode reverse recovery mercury
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- High diode reverse recovery vanadium
- High diode reverse recovery niobium
- High diode reverse recovery tantalum
- High diode reverse recovery tungsten
- High diode reverse recovery molybdenum
- High diode reverse recovery ruthenium
- High diode reverse recovery rhodium
- High diode reverse recovery palladium
- High diode reverse recovery silver
- High diode reverse recovery gold
- High diode reverse recovery platinum
- High diode reverse recovery osmium
- High diode reverse recovery iridium
- High diode reverse recovery selenium
- High diode reverse recovery tellurium
- High diode reverse recovery polonium
- High diode reverse recovery astatine
- High diode reverse recovery francium
- High diode reverse recovery radium
- High diode reverse recovery actinium
- High diode reverse recovery thorium
- High diode reverse recovery protactinium
- High diode reverse recovery uranium
- High diode reverse recovery neptunium
- High diode reverse recovery plutonium
- High diode reverse recovery americium
- High diode reverse recovery curium
- High diode reverse recovery berkelium
- High diode reverse recovery californium
- High diode reverse recovery einsteinium
- High diode reverse recovery fermium
- High diode reverse recovery mendelevium
- High diode reverse recovery nobelium
- High diode reverse recovery lawrencium

Typical Applications*

- High speed switching
- High efficiency
- High diode reverse recovery speed
- High diode reverse recovery energy
- High diode reverse recovery charge
- High diode reverse recovery time
- High diode reverse recovery current
- High diode reverse recovery voltage
- High diode reverse recovery power
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Z_{th}	Symbol	Conditions	Values	Units
Z_{th(j-c)}	B ₁	I _D :	∞	& @^
	B ₁	I _D =	>, E	& @^
	B ₁	I _D :	∞	& @^
	B ₁	I _D J	>, E	& @^
	f _Z f ₁	I _D :	>, >WJ	!
	f _Z f ₁	I _D =	>, >>VK	!
	f _Z f ₁	I _D :	>, >>∞	!
	f _Z f ₁	I _D J	>, >>∞	!
Z_{th(j-c)D}	B ₁	I _D :	VE	& @^
	B ₁	I _D =	∞	& @^
	B ₁	I _D :	>, ∞	& @^
	B ₁	I _D J	∞, J	& @^
	f _Z f ₁	I _D :	>, >∞	!
	f _Z f ₁	I _D =	>, >>∞	!
	f _Z f ₁	I _D :	>, >>∞	!
	f _Z f ₁	I _D J	>, >>∞	!



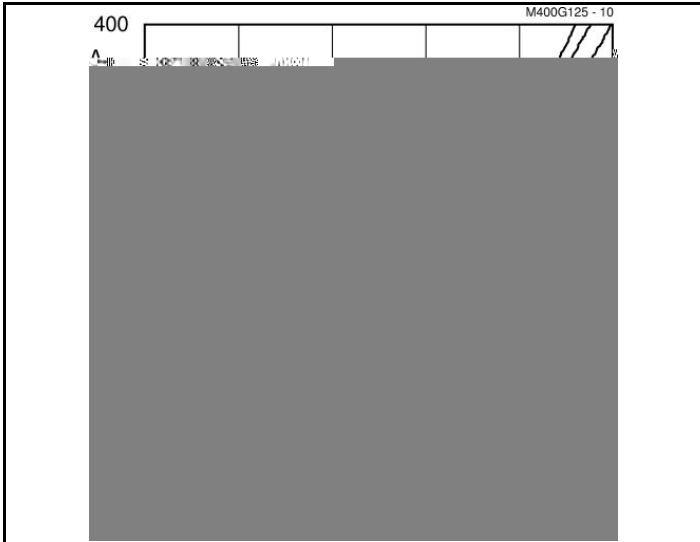


Fig. 1 Typ. output characteristic, inclusive R_{CC+EE}

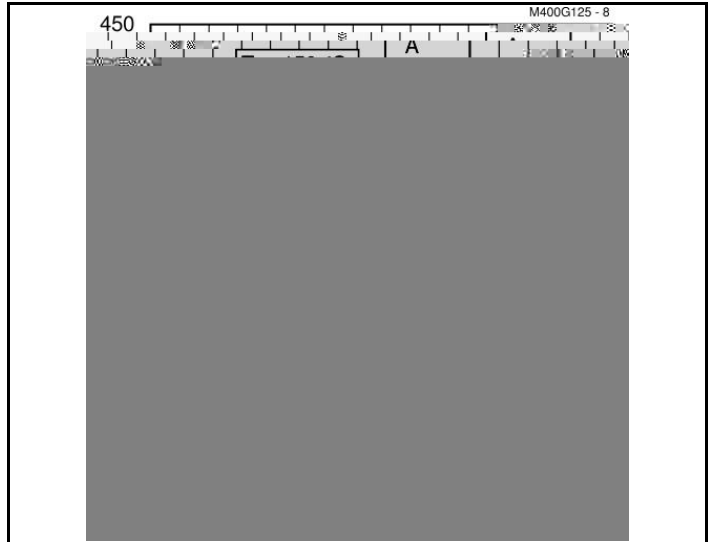


Fig. 2 Rated current vs. temperature $I_C = f(T_C)$



Fig. 3 Typ. turn-on /off energy = $f(I_C)$

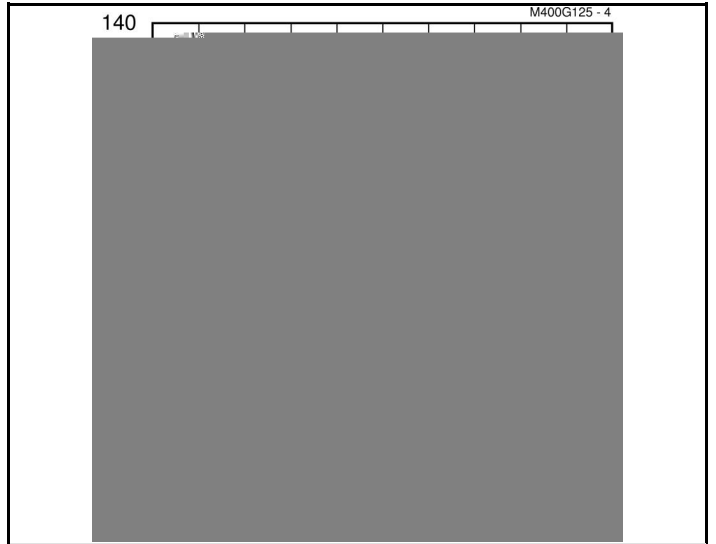


Fig. 4 Typ. turn-on /off energy = $f(R_G)$

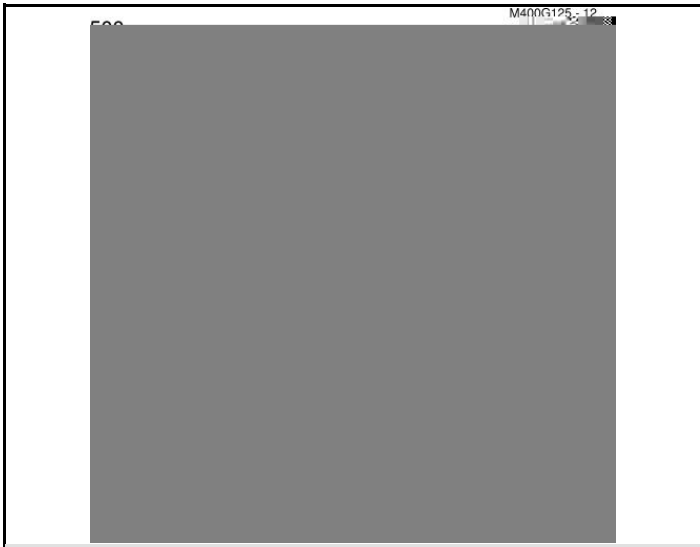


Fig. 5 Typ. transfer characteristic

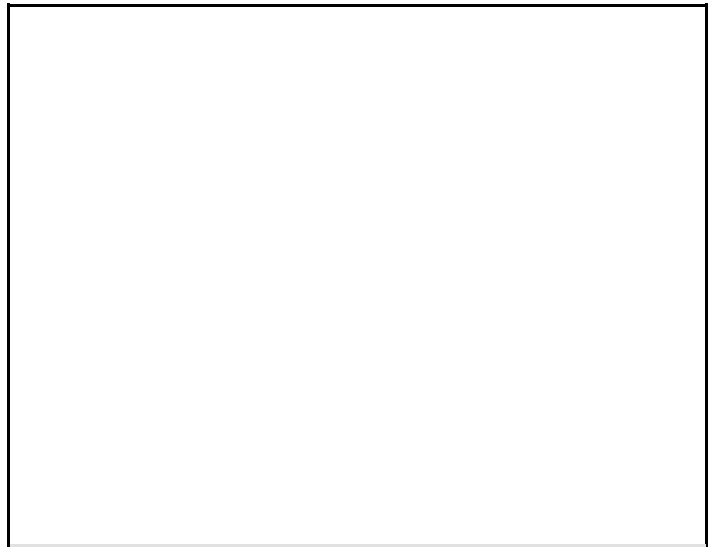
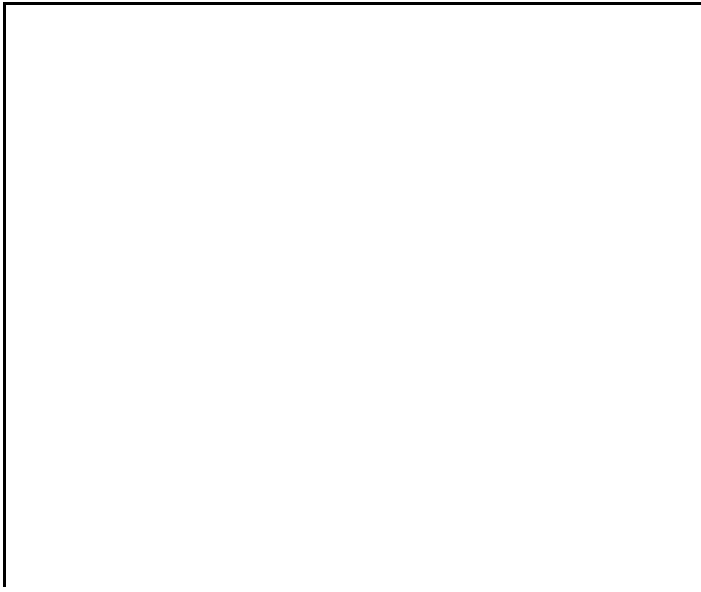


Fig. 6 Typ. gate charge characteristic



4 Ž! ž 6 E.

