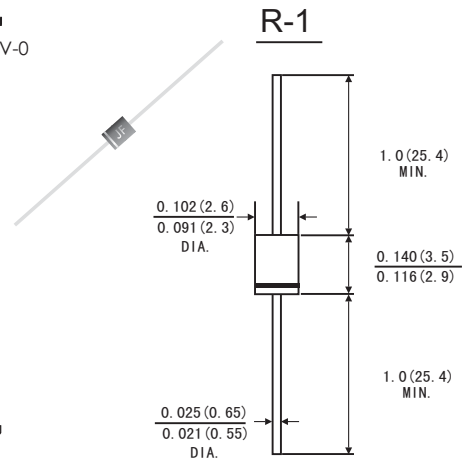


FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Bilateral voltage triggered
- AC circuit oriented
- Glass-passivated junctions
- High surge current capabilities
- High voltage lamp ignitors
- Xenon ignitors
- Natural gas ignitors
- Over voltage protector
- High temperature soldering guaranteed:260°C/10 seconds at terminals
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

MECHANICAL DATA

- Case: JEDEC R-1 molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750,method 2026
- Weight: 0.007 ounce, 0.20 gram



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Ratings at 25°C ambient temperature unless otherwise specified ,Single phase ,half wave ,resistive or inductive load. For capacitive load, derate by 20%.)

	Symbols	DB105R	Units
Repetitive Peak Off-state Voltage	V_{DRM}	± 90	Volts
Breakover Current 50/60 Hz sine wave	I_{BO}	10	μA
Repetive peak off-state current, 50/60Hz sine wave	I_{DRM}	10	μA
Maximum on-state RMS current, $T_J \leq 110^\circ C$ 50/60Hz sine wave	$I_T(RMS)$	0.6	Amp
Breakover voltage 50/60Hz sine wave	MIN	95	Volts
	MAX	113	
Maximum dynamic holding current 50/60Hz sine wave $R=100\Omega$	I_H	100	mA
Peak one cycle surge current sine wave (non-repetitive)	50Hz	16.7	A
	60Hz	20	
Typical peak on-state voltage($I_T=0.6A$)	V_{TM}	1.5	Volts
Switching resistance $(V_{BO}-V_S)/(I_S-I_{BO})$ 60Hzsine wave	R_s	0.1	K Ω
Operating temperature range	T_J	-40 to +110	$^\circ C$
Operating junction and storage temperature range	T_{STG}	-55 to +150	$^\circ C$

RATINGS AND CHARACTERISTIC CURVES DB105R

V-I Characteristics

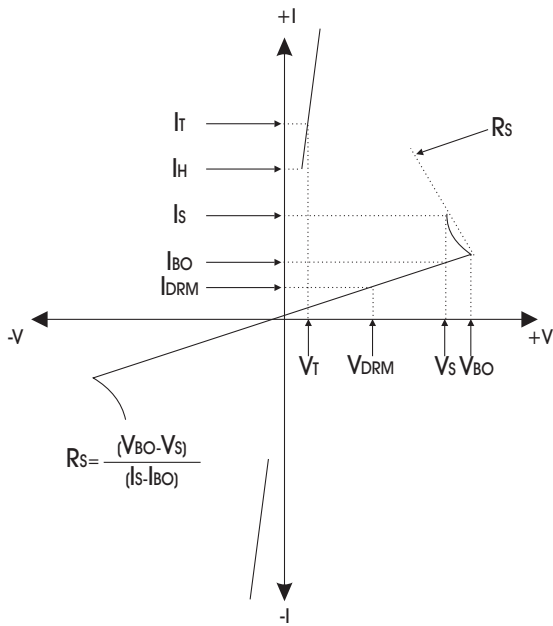


FIG.1 Normalized DC Holding Current vs case/Lead Temperature

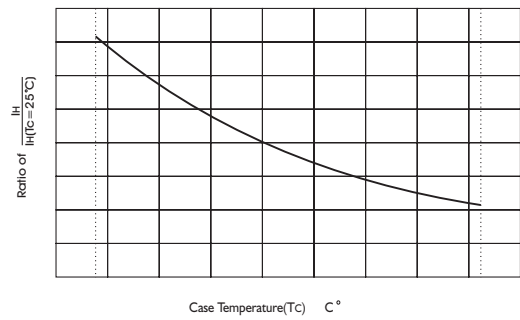
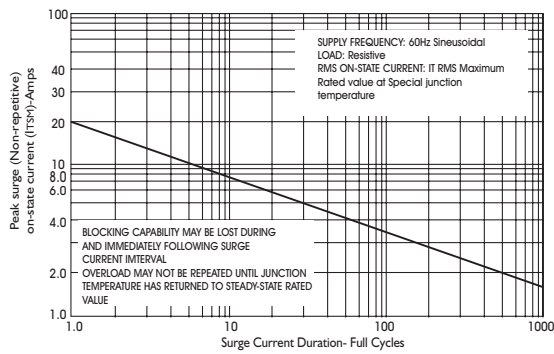


FIG.2 Peak surge current vs surge current duration



RATINGS AND CHARACTERISTIC CURVES DB105R

FIG.3 Maximum Allowable Ambient temperature vs on-state Current

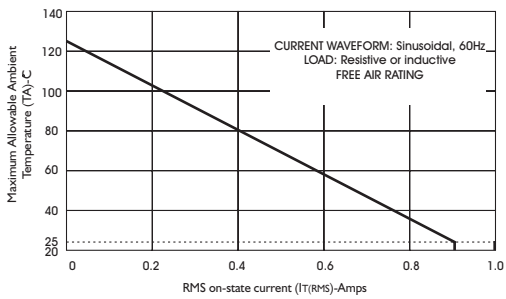


FIG.4 Normalized Repetitive Peak Breakover Current vs Junction Temperature

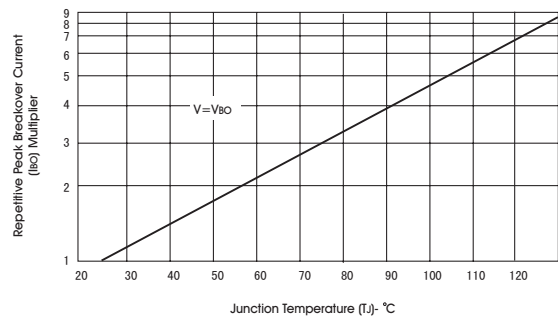


FIG.5 Normalized Cbo Changes vs Case Temperature

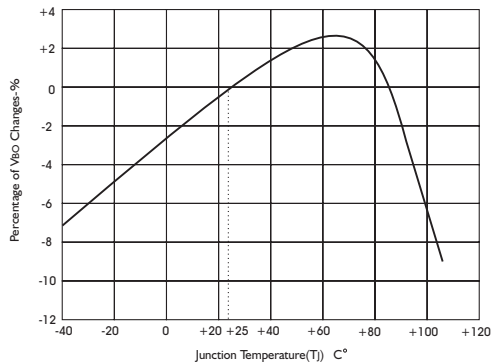


FIG.6 Repetitive Peak On-State Current (ITRM) vs Pulse Width at Various Frequencies

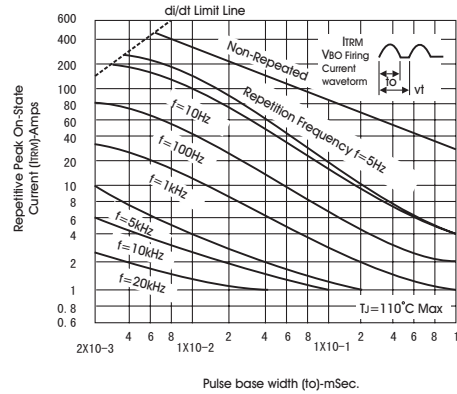


FIG.7 On-State Current vs On-State Voltage

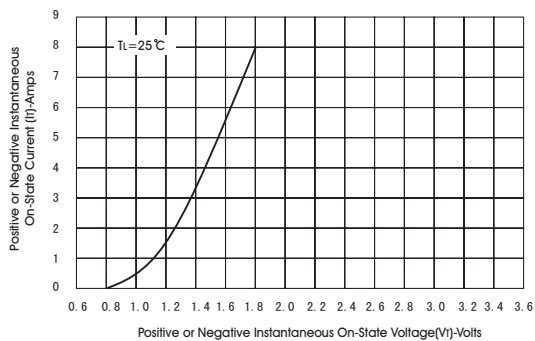
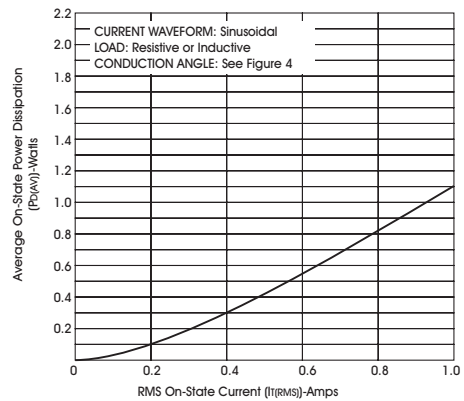


FIG.8 Power Dissipation (Typical) vs On-State Current



RATINGS AND CHARACTERISTIC CURVES DB105R

FIG.9 Ignitor Circuit (Low Voltage Input)

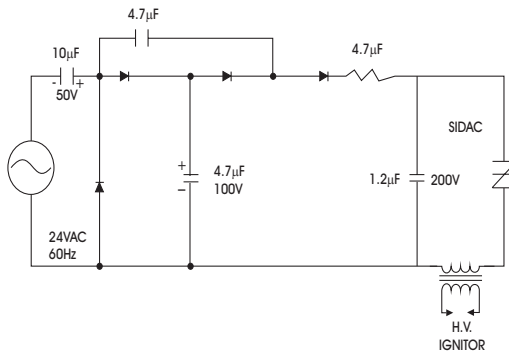


FIG.10 Typical High Pressure Sodium Lamp Firing Circuit

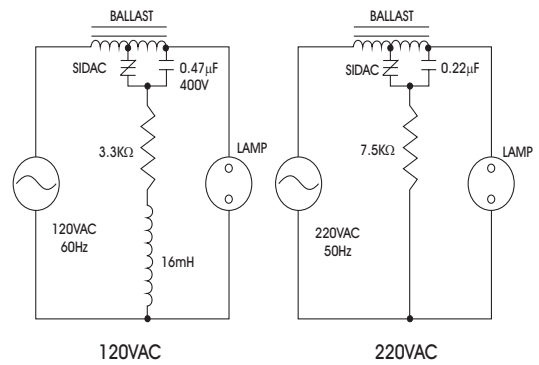


FIG.11 Comparison of SIDAC vs SCR

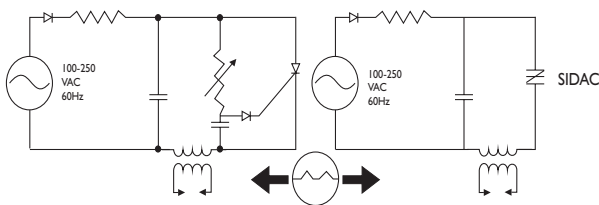


FIG.12 Xenon Lamp Flashing Circuit

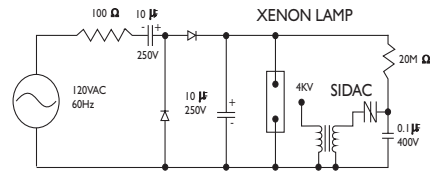


FIG.13 Dynamic Holding Current Test Circuit for SIDAC

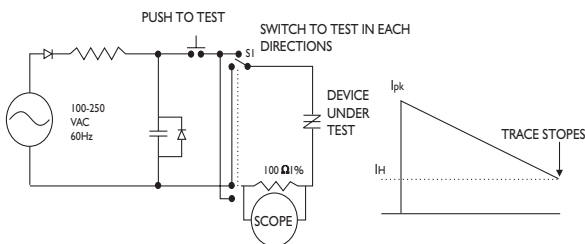
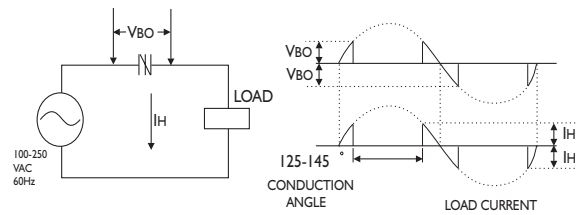


FIG.14 Basic SIDAC Circuit



RATINGS AND CHARACTERISTIC CURVES DB105R

FIG.15 Relaxation Oscillator Using a SIDAC

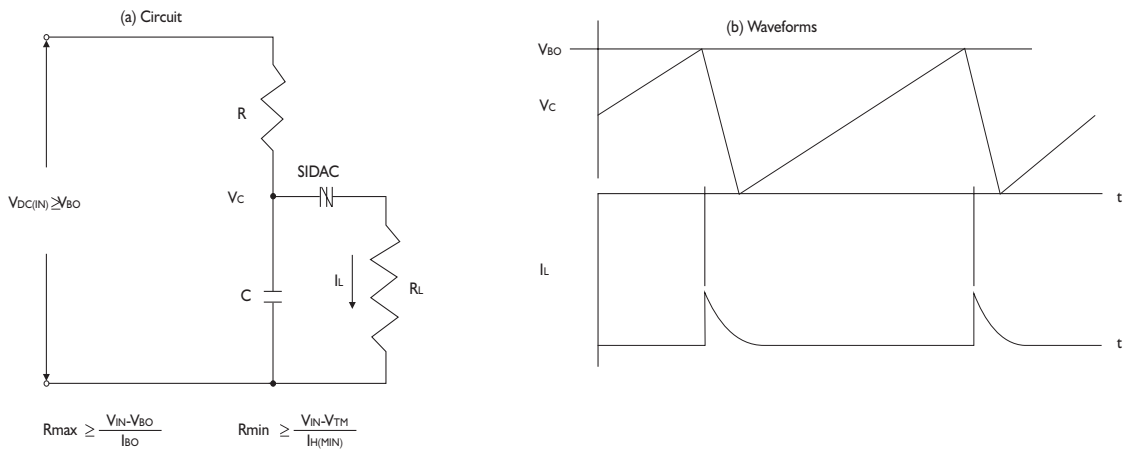
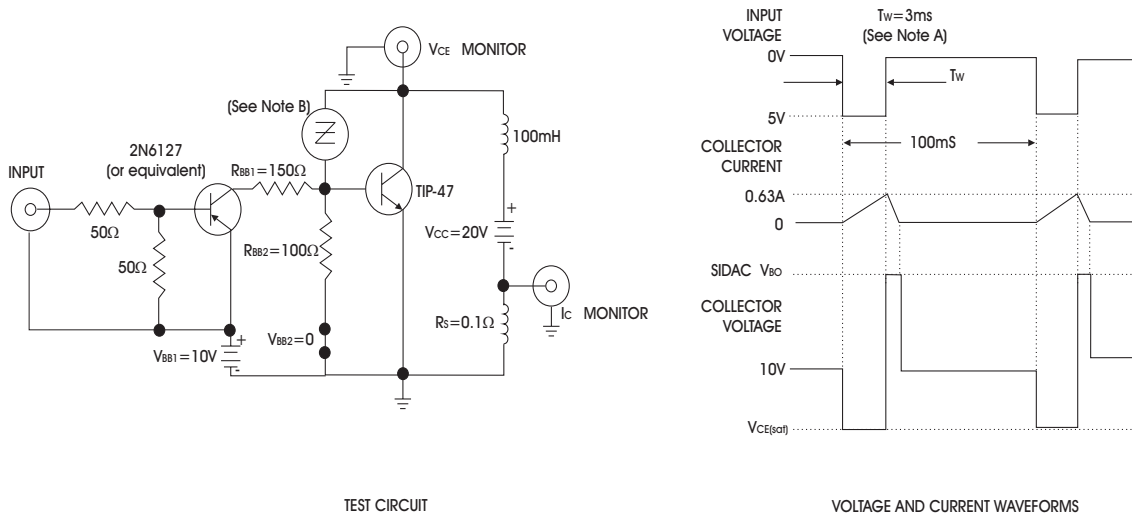


FIG.16 SIDAC Added To Protect Transistor For Typical Transistor Inductive Load Switching Requirements



NOTE A: Input pulse width is increased until $I_{CM} = 0.63A$.

NOTE B: Sidac (or Diac or series of diacs) chosen so that V_{BO} is just below V_{CBO} rating of transistor to be protected. The Sidac (or Diac) eliminates a reverse breakdown of the transistor in inductive switching circuits where otherwise the transistor could be destroyed.