Absolute Maximum Ratings, T_A = 25 °C (Unless Otherwise Noted)

Rating		Symbol	Value	Unit
Repetitive peak off-state voltage	‘4070J3BJ	V_{DRM}	±58	V
	‘4080J3BJ		±65	
	‘4095J3BJ		±75	
	‘4115J3BJ		±90	
	‘4125J3BJ		±100	
	‘4145J3BJ		±120	
	‘4165J3BJ		±135	
	‘4180J3BJ		±145	
	‘4200J3BJ		±155	
	‘4219J3BJ		±180	
	‘4250J3BJ		±190	
	‘4290J3BJ		±220	
	‘4350J3BJ		±275	
	‘4395J3BJ		±320	
Non-repetitive peak impulse current (see Notes 1 and 2)		I_{PPSM}		A
2/10 µs (GR-1089-CORE, 2/10 µs voltage wave shape)			±1000	
8/20 µs (IEC 61000-4-5, combination wave generator, 1.2/50 µsvoltage wave shape)			±800	
10/160 µs (TIA-968-A, 10/160 µs voltage wave shape)			±400	
4/250 µs (ITU-T K.20/21, 10/700 µs voltage waveshape, simultaneous)			±370	
5/310 µs (ITU-T K.20/21, 10/700 µs voltage wave shape, single)			±350	
5/320 µs (TIA-968-A, 9/720 µs voltage waveshape, single)			±350	
10/560 µs (TIA-968-A, 10/560 µs voltage wave shape)			±250	
10/1000 µs (GR-1089-CORE, 10/1000 µs voltage wave shape)			±200	
Non-repetitive peak on-state current (see Notes 1 and 2)				
20 ms, 50 Hz (full sine wave)		I_{TSM}	50	A
Initial rate of rise of on-state current. Linear current ramp. Maximum ramp value < 50 A		di_T/dt	800	A/µs
Junction temperature		T_J	-40 to +150	°C
Storage temperature range		T_{stg}	-65 to +150	°C

NOTES: 1. Initially the device must be in thermal equilibrium with T_J = 25 °C.
2. These non-repetitive rated currents are peak values of either polarity. The surge may be repeated after the device returns to its initial conditions.

Electrical Characteristics, T_A = 25 °C (Unless Otherwise Noted)

Parameter		Test Conditions		Min	Typ	Max	Unit
I_{DRM}	Repetitive peak off-state current	$V_D = V_{DRM}$	T_A = 25 °C			±5	µA
			T_A = 85 °C			±10	
$V_{(BO)}$	AC Breakover voltage	dv/dt = ±250 V/ms, R_{SOURCE} = 300 Ω	‘4070J3BJ			±70	V
			‘4080J3BJ			±80	
			‘4095J3BJ			±95	
			‘4115J3BJ			±115	
			‘4125J3BJ			±125	
			‘4145J3BJ			±145	
			‘4165J3BJ			±165	
			‘4180J3BJ			±180	
			‘4200J3BJ			±200	
			‘4219J3BJ			±219	
			‘4250J3BJ			±250	
			‘4290J3BJ			±290	
			‘4350J3BJ			±350	
			‘4395J3BJ			±395	

Electrical Characteristics, T_A = 25 °C (Unless Otherwise Noted)

Parameter		Test Conditions		Min	Typ	Max	Unit
$V_{(BO)}$	Ramp breakover voltage	dv/dt ≤ ±1000 V/μs, Linear voltage ramp, Maximum ramp value = ±500 V di/dt = ±20 A/μs, Linear current ramp, Maximum ramp value = ±10 A	'4070J3BJ			±77	V
			'4080J3BJ			±88	
			'4095J3BJ			±104	
			'4115J3BJ			±125	
			'4125J3BJ			±135	
			'4145J3BJ			±156	
			'4165J3BJ			±177	
			'4180J3BJ			±192	
			'4200J3BJ			±212	
			'4219J3BJ			±231	
			'4250J3BJ			±263	
			'4290J3BJ			±303	
			'4350J3BJ			±364	
			'4395J3BJ			±409	
$I_{(BO)}$	Breakover current	dv/dt = ±250 V/ms, R_{SOURCE} = 300 Ω	'4070J3BJ thru '4115J3BJ			±900	mA
			'4125J3BJ thru '4219J3BJ			±800	
			'4250J3BJ thru '4395J3BJ			±600	
I_H	Holding current	I_T = ±5 A, di/dt = ±30 mA/ms		±150		±600	mA
dv/dt	Critical rate of rise of off-state voltage	Linear voltage ramp Maximum ramp value < 0.85V_{DRM}		±5			kV/μs
I_D	Off-state current	V_D = ±50 V	T_A = 85 °C			±10	μA
C_O	Off-state capacitance	f = 1 MHz, V_d = 1 V rms, V_D = 0	'4070J3BJ thru '4115J3BJ		195	235	pF
			'4125J3BJ thru '4219J3BJ		120	145	
			'4250J3BJ thru '4395J3BJ		105	125	
		f = 1 MHz, V_d = 1 V rms, V_D = -1 V	'4070J3BJ thru '4115J3BJ		180	215	
			'4125J3BJ thru '4219J3BJ		110	132	
			'4250J3BJ thru '4395J3BJ		95	115	
		f = 1 MHz, V_d = 1 V rms, V_D = -2 V	'4070J3BJ thru '4115J3BJ		165	200	
			'4125J3BJ thru '4219J3BJ		100	120	
			'4250J3BJ thru '4395J3BJ		90	105	
		f = 1 MHz, V_d = 1 V rms, V_D = -50 V	'4070J3BJ thru '4115J3BJ		85	100	
			'4125J3BJ thru '4219J3BJ		50	60	
			'4250J3BJ thru '4395J3BJ		42	50	
		f = 1 MHz, V_d = 1 V rms, V_D = -100 V (see Note 3)	'4125J3BJ thru '4219J3BJ		40	50	
			'4250J3BJ thru '4395J3BJ		35	40	

NOTE: 3. To avoid possible clipping, the TISP4125J3BJ is tested with V_D = -98 V.

Thermal Characteristics

Parameter		Test Conditions	Min	Typ	Max	Unit
$R_{\theta JA}$	Junction to ambient thermal resistance	EIA/JESD51-3 PCB, I_T = $I_{TSM(1000)}$ (see Note 4)			90	°C/W

NOTE: 4. EIA/JESD51-2 environment and PCB has standard footprint dimensions connected with 5 A rated printed wiring track widths.

Parameter Measurement Information

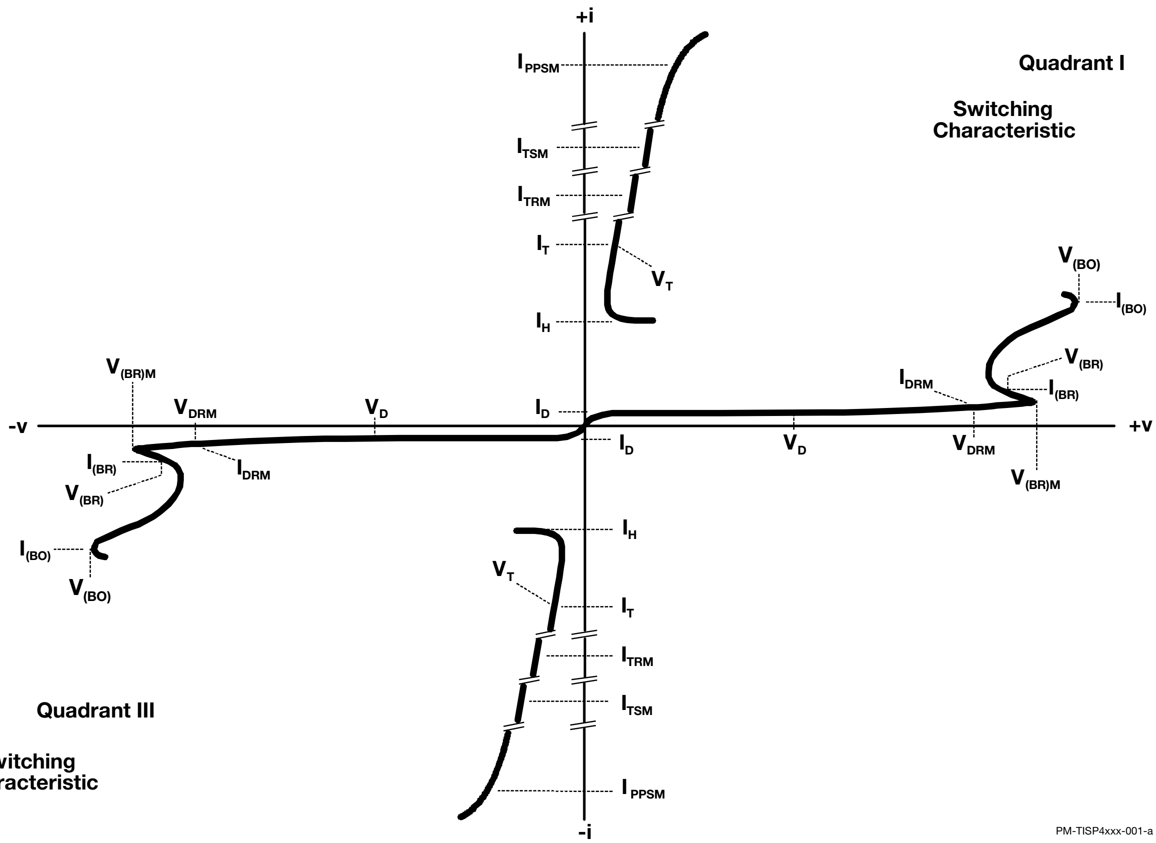

Figure 1. Voltage-Current Characteristic for T and R Terminals
All Measurements are Referenced to the R Terminal

Typical Characteristics

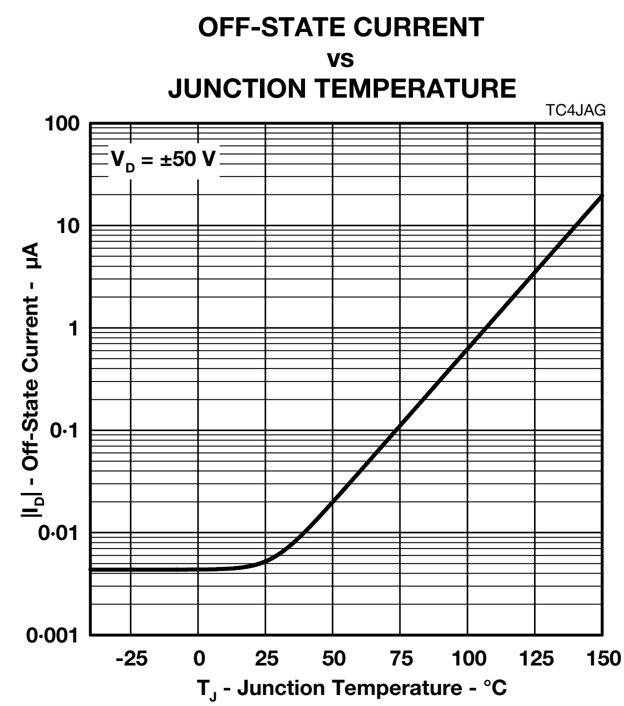

Figure 2.

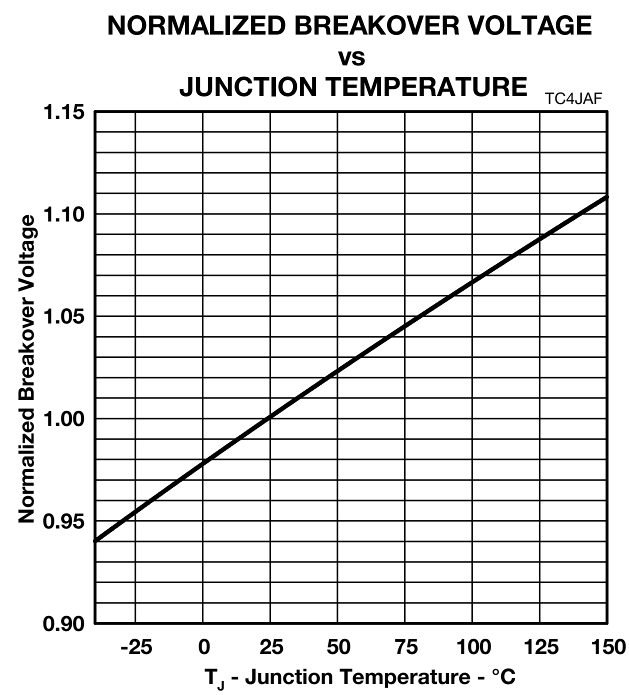

Figure 3.

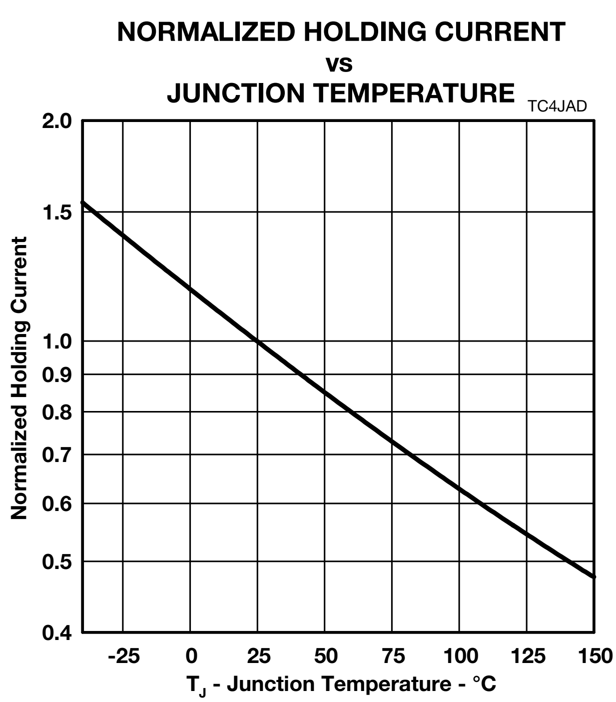

Figure 4.

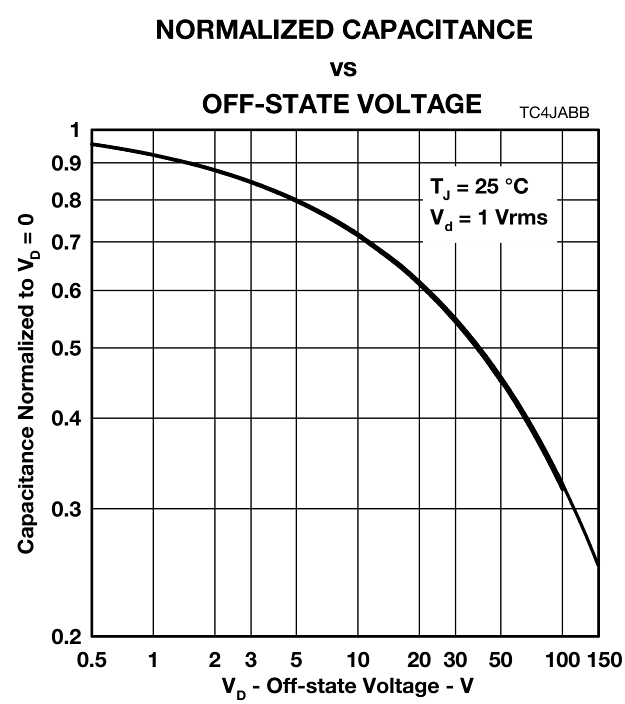

Figure 5.

Rating and Thermal Characteristics

NON-REPETITIVE PEAK ON-STATE CURRENT
vs
CURRENT DURATION

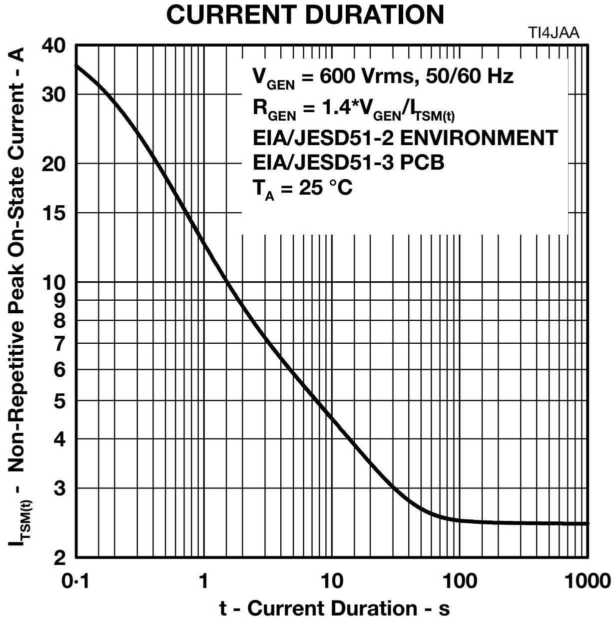

Figure 6.

V_{DRM} DERATING FACTOR
vs
MINIMUM AMBIENT TEMPERATURE

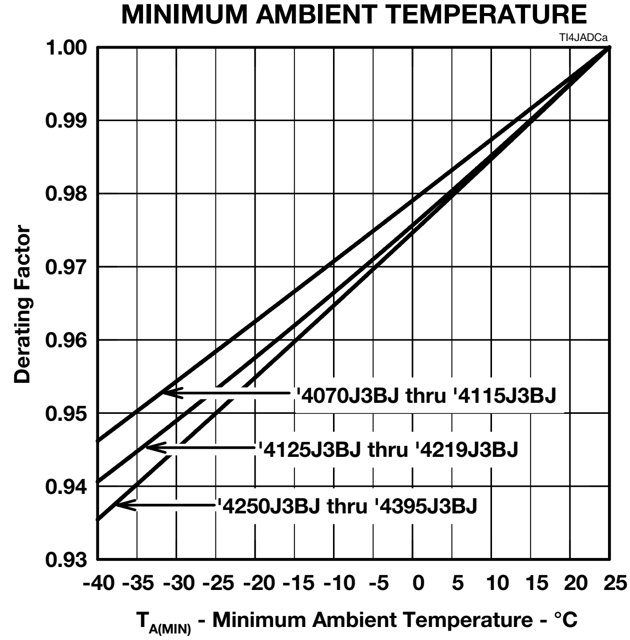

Figure 7.

Applications Information

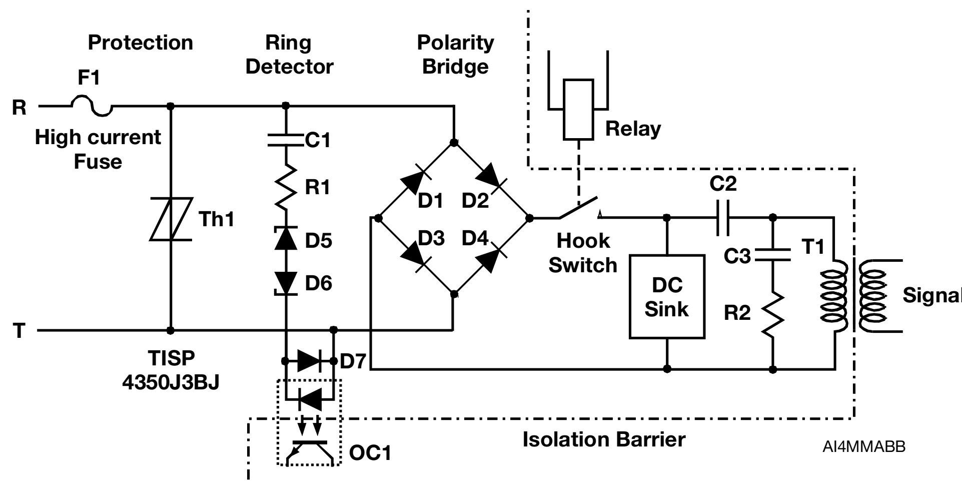

Figure 8. Typical Application Circuit

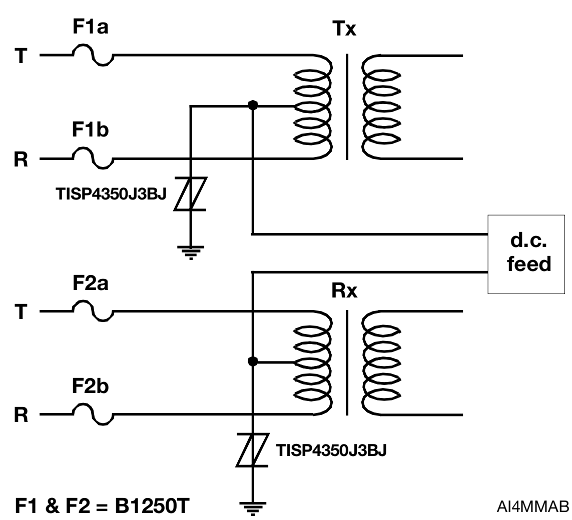

Figure 9. Typical Application Circuit

BOURNS®

Asia-Pacific: Tel: +886-2 2562-4117 • Email: asiacus@bourns.com
Europe: Tel: +36 88 885 877 • Email: eurocus@bourns.com
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