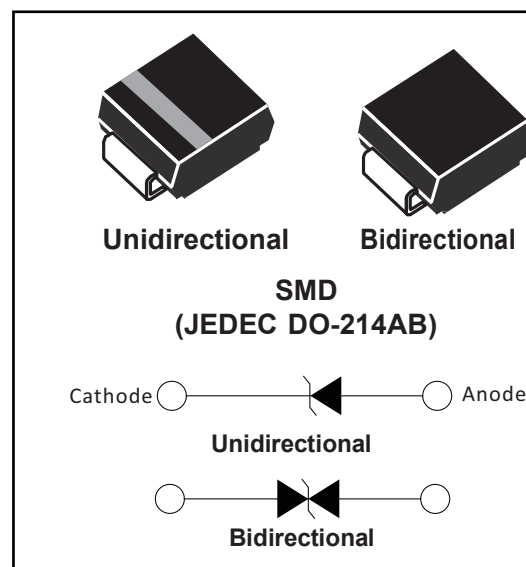


Automotive 5000W

Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- 5000W peak pulse power capability with a 10/1000 μ s waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Meest MSL level 1
- AEC-Q101



Typical Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, telecommunication.

■Maximum Ratings ($T_A=25^{\circ}\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000 μ s waveform ⁽¹⁾ ⁽²⁾	P_{PPM}	W	5000
Peak pulse current, with a 10/1000 μ s waveform ⁽¹⁾	I_{PPM}	A	See Next Table
Power dissipation, on infinite heat sink at $T_L=75^{\circ}\text{C}$ ⁽²⁾	P_D	W	6.5
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽³⁾	I_{FSM}	A	300
Operating junction and storage temperature range	T_J, T_{STG}	$^{\circ}\text{C}$	-55 to +150

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^{\circ}\text{C}$ per Fig.2.
 (2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal

■Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage $V_{BR}@I_T$			Maximum Reverse Leakage I_R @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current $I_{PP}^{(2)}$ (A)	Maximum Clamping Voltage V_c @ I_{PP} (V)
		Min(V)	Max (V)	$I_T^{(1)}$ (mA)				
SMD50J11UC	SMD50J11BC	12.2	13.5	1.0	800.0	11.0	274.7	18.2
SMD50J12UC	SMD50J12BC	13.3	14.7	1.0	800.0	12.0	251.3	19.9
SMD50J13UC	SMD50J13BC	14.4	15.9	1.0	500.0	13.0	232.6	21.5
SMD50J14UC	SMD50J14BC	15.6	17.2	1.0	200.0	14.0	215.5	23.2
SMD50J15UC	SMD50J15BC	16.7	18.5	1.0	100.0	15.0	204.9	24.4
SMD50J16UC	SMD50J16BC	17.8	19.7	1.0	50.0	16.0	192.3	26
SMD50J17UC	SMD50J17BC	18.9	20.9	1.0	20.0	17.0	181.2	27.6
SMD50J18UC	SMD50J18BC	20.0	22.1	1.0	10.0	18.0	171.2	29.2
SMD50J19UC	SMD50J19BC	21.1	23.3	1.0	10.0	19.0	162.3	30.8
SMD50J20UC	SMD50J20BC	22.2	24.5	1.0	5.0	20.0	154.3	32.4
SMD50J22UC	SMD50J22BC	24.4	26.9	1.0	5.0	22.0	140.8	35.5
SMD50J24UC	SMD50J24BC	26.7	29.5	1.0	5.0	24.0	128.5	38.9
SMD50J26UC	SMD50J26BC	28.9	31.9	1.0	5.0	26.0	118.8	42.1
SMD50J28UC	SMD50J28BC	31.1	34.4	1.0	5.0	28.0	110.1	45.4
SMD50J30UC	SMD50J30BC	33.3	36.8	1.0	5.0	30.0	103.3	48.4
SMD50J33UC	SMD50J33BC	36.7	40.6	1.0	5.0	33.0	93.8	53.3
SMD50J36UC	SMD50J36BC	40.0	44.2	1.0	5.0	36.0	86.1	58.1
SMD50J40UC	SMD50J40BC	44.4	49.1	1.0	5.0	40.0	77.5	64.5
SMD50J43UC	SMD50J43BC	47.8	52.8	1.0	5.0	43.0	72.0	69.4
SMD50J45UC	SMD50J45BC	50.0	55.3	1.0	5.0	45.0	68.8	72.7
SMD50J48UC	SMD50J48BC	53.3	58.9	1.0	5.0	48.0	64.6	77.4
SMD50J51UC	SMD50J51BC	56.7	62.7	1.0	5.0	51.0	60.7	82.4
SMD50J54UC	SMD50J54BC	60.0	66.3	1.0	5.0	54.0	57.4	87.1
SMD50J58UC	SMD50J58BC	64.4	71.2	1.0	5.0	58.0	53.4	93.6
SMD50J60UC	SMD50J60BC	66.7	73.7	1.0	5.0	60.0	51.7	96.8
SMD50J64UC	SMD50J64BC	71.1	78.6	1.0	5.0	64.0	48.5	103
SMD50J70UC	SMD50J70BC	77.8	86.0	1.0	5.0	70.0	44.2	113
SMD50J75UC	SMD50J75BC	83.3	92.1	1.0	5.0	75.0	41.3	121
SMD50J78UC	SMD50J78BC	86.7	95.8	1.0	5.0	78.0	39.7	126

■Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage $V_{BR}@I_T$			Maximum Reverse Leakage I_R @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current $I_{PP}^{(2)}$ (A)	Maximum Clamping Voltage V_C @ I_{PP} (V)
		Min(V)	Max (V)	$I_T^{(1)}$ (mA)				
SMD50J85UC	SMD50J85BC	94.4	104.0	1.0	5.0	85.0	36.5	137
SMD50J90UC	SMD50J90BC	100.0	111.0	1.0	5.0	90.0	34.2	146
SMD50J100UC	SMD50J100BC	111.0	123.0	1.0	5.0	100.0	30.9	162
SMD50J110UC	SMD50J110BC	122.0	135.0	1.0	5.0	110.0	28.2	177
SMD50J120UC	SMD50J120BC	133.0	147.0	1.0	5.0	120.0	25.9	193
SMD50J130UC	SMD50J130BC	144.0	159.0	1.0	5.0	130.0	23.9	209
SMD50J140UC	SMD50J140BC	155.0	171.0	1.0	5.0	140.0	22.0	226.8
SMD50J150UC	SMD50J150BC	167.0	185.0	1.0	5.0	150.0	20.6	243
SMD50J160UC	SMD50J160BC	178.0	197.0	1.0	5.0	160.0	19.3	259
SMD50J170UC	SMD50J170BC	189.0	209.0	1.0	5.0	170.0	18.2	275
SMD50J180UC	SMD50J180BC	200.2	220.0	1.0	5.0	180.0	17.1	291.6
SMD50J190UC	SMD50J190BC	211.0	232.0	1.0	5.0	190.0	16.2	307.8
SMD50J200UC	SMD50J200BC	224.0	247.0	1.0	5.0	200.0	15.4	324
SMD50J220UC	SMD50J220BC	246.0	272.0	1.0	5.0	220.0	14.0	356
SMD50J250UC	SMD50J250BC	279.0	309.0	1.0	5.0	250.0	12.3	405
SMD50J300UC	SMD50J300BC	335.0	371.0	1.0	5.0	300.0	10.3	486
SMD50J350UC	SMD50J350BC	391.0	432.0	1.0	5.0	350.0	8.8	567
SMD50J400UC	SMD50J400BC	447.0	494.0	1.0	5.0	400.0	7.7	648
SMD50J440UC	SMD50J440BC	492.0	543.0	1.0	5.0	440.0	7.0	713

Notes:

- (1) Pulse Test: $t_p \leq 50ms$ Pulse test: $t_p \leq 50ms$.
- (2) Surge current waveform per Fig. 3 and derated per Fig.2.

■ Characteristics(Typical)

FIG1: Peak Pulse Power Rating Curve

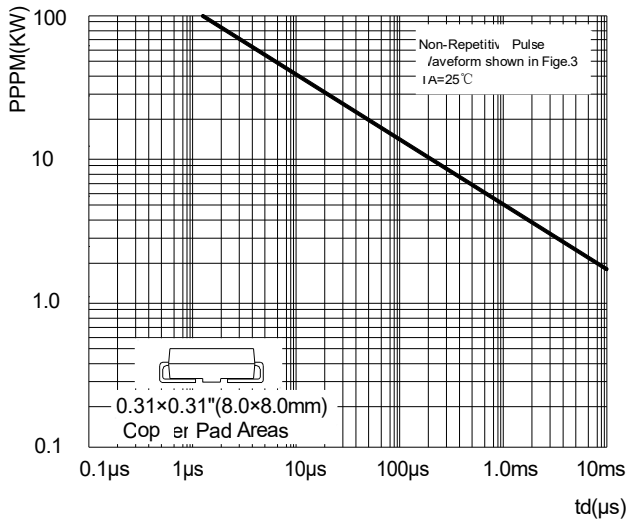


FIG2: Pulse Power or Current vs. Initial Junction Temperature

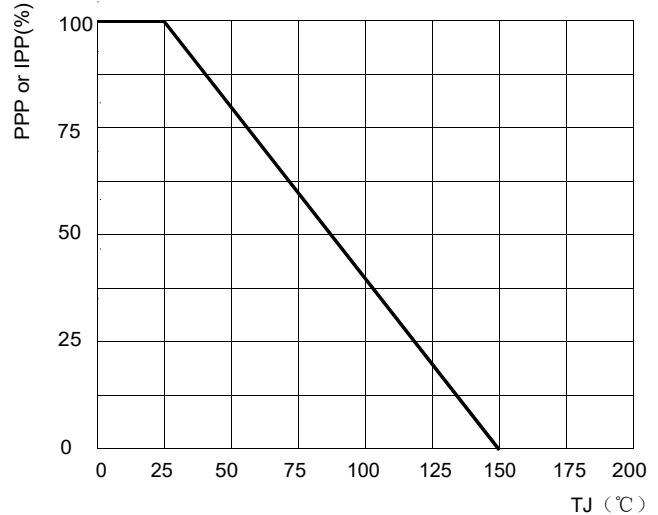


FIG3: Pulse Waveform

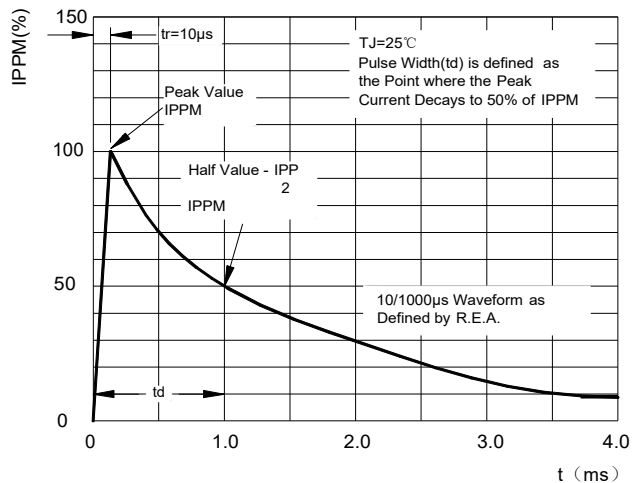


FIG4: Typical Transient Thermal Impedance

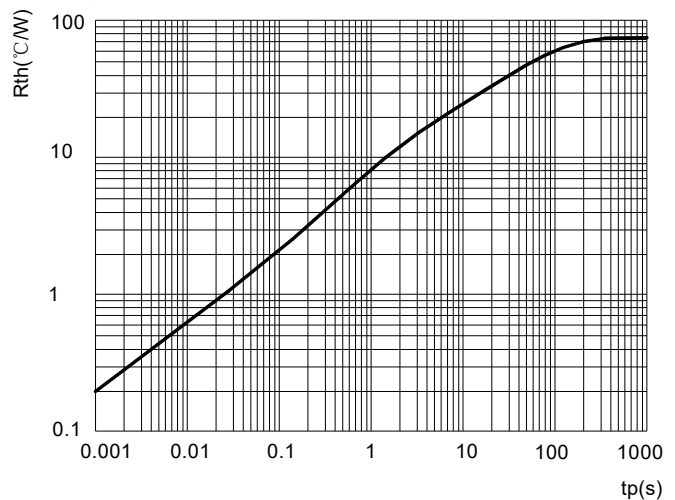


FIG5: Maximum Non-Repetitive Surge Current

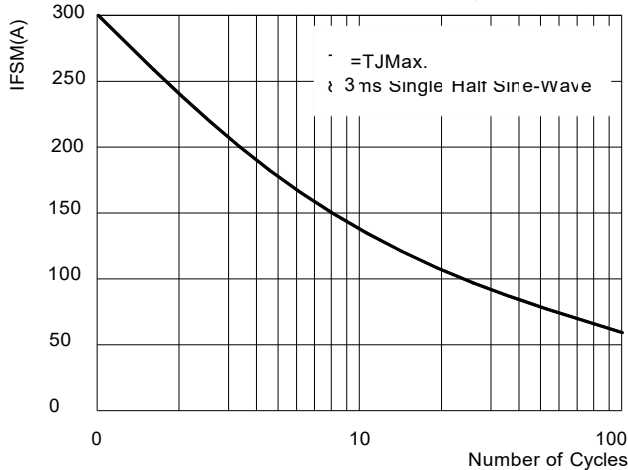
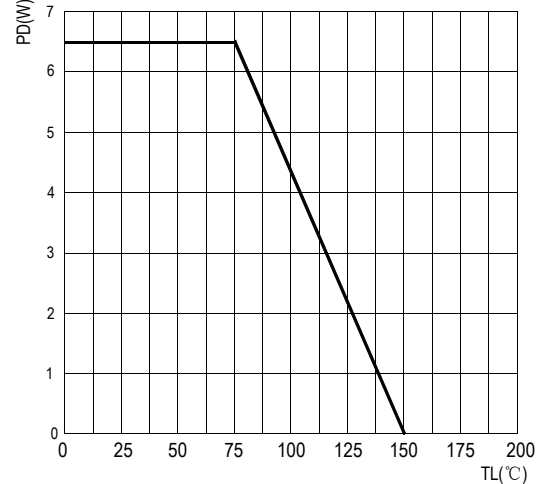
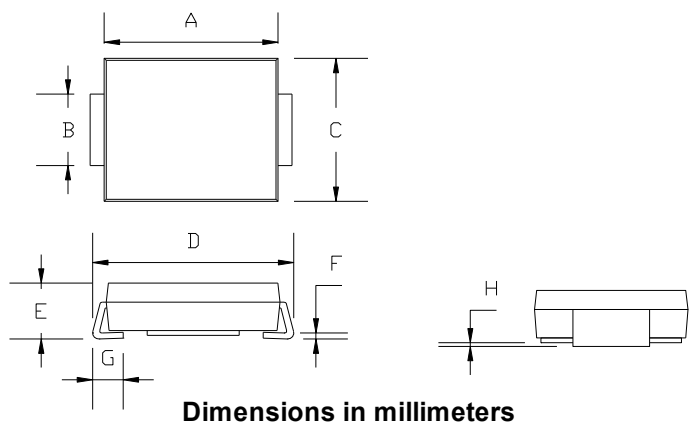


FIG6: Steady State Power Dissipation



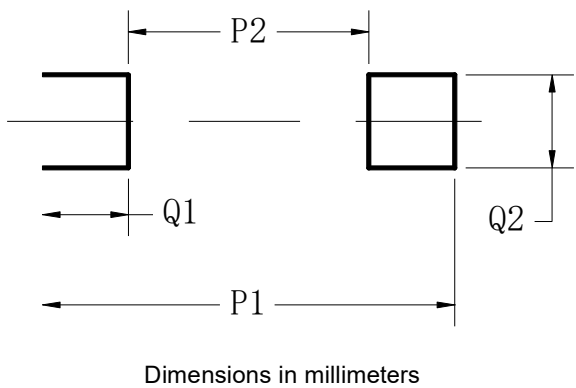
■ Outline Dimensions

DO-214AB(SMD)



DO-214AB (SMD)		
Dim	Min	Max
A	6.60	7.11
B	2.85	3.27
C	5.59	6.22
D	7.75	8.13
E	1.99	2.61
F	0.15	0.31
G	0.76	1.52
H	0.05	0.20

■ Suggested pad layout



Dim	Min
P1	9.9
P2	3.84
Q1	3.03
Q2	3.82