

Kingbright

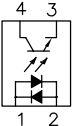
Optoelectronic Components

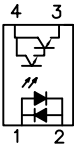


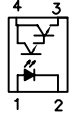
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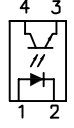
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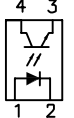
Photo Reflective Sensor 104

PART NUMBER	PIN CONFIGURATION	SAFETY STANDARDS	FEATURES	ABSOLUTE MAXIMUM RATINGS		ELECTRICAL CHARACTERISTICS					
				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=±1mA, V _{CE} =5V	IF=±20mA, I _C =1mA	MIN.	MAX.	TYP.	MAX.
KB814		UL NO.E225308 & VDE0884. NO.40006364	High isolation voltage AC input response	5000	35	20	300	0.1	0.2	4	3

PART NUMBER	PIN CONFIGURATION	SAFETY STANDARDS	FEATURES	ABSOLUTE MAXIMUM RATINGS		ELECTRICAL CHARACTERISTICS					
				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=±1mA, V _{CE} =2V	IF=±20mA, I _C =5mA	MIN.	MAX.	TYP.	MAX.
KB8141		UL NO.E225308 & VDE0884. NO.40006364	High isolation voltage High sensitivity AC input response	5000	35	600	7500	0.8	1	60	53

PART NUMBER	PIN CONFIGURATION	SAFETY STANDARDS	FEATURES	ABSOLUTE MAXIMUM RATINGS		ELECTRICAL CHARACTERISTICS					
				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=1mA, V _{CE} =2V	IF=20mA, I _C =5mA	MIN.	MAX.	TYP.	MAX.
KB815		UL NO.E225308 & VDE0884. NO.40006364	High isolation voltage High sensitivity	5000	35	600	7500	0.8	1	60	53

PART NUMBER	PIN CONFIGURATION	SAFETY STANDARDS	FEATURES	ABSOLUTE MAXIMUM RATINGS		ELECTRICAL CHARACTERISTICS					
				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=5mA, V _{CE} =5V	IF=20mA, I _C =1mA	MIN.	MAX.	TYP.	MAX.
KB816		UL NO.E225308 & VDE0884. NO.40006364	High isolation voltage High collector-emitter voltage	5000	70	50	600	0.1	0.2	4	3

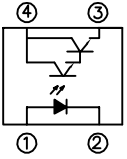
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				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=5mA, V _{CE} =5V	IF=20mA, I _C =1mA	MIN.	MAX.	TYP.	MAX.
KB817		UL NO.E225308 & VDE0884. NO.40006364	High isolation voltage	5000	35	50	600	0.1	0.2	4	3

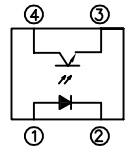
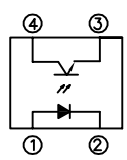
PART NUMBER	PIN CONFIGURATION	SAFETY STANDARDS	FEATURES	ABSOLUTE MAXIMUM RATINGS		ELECTRICAL CHARACTERISTICS					
				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=5mA, V _{CE} =5V	IF=20mA, I _C =1mA	V _{CE} =2V, I _C =2mA, R _L =100Ω	MIN.	MAX.	TR
KB851		VDE0884. NO.40006364	High collector-emitter Voltage	5000	350	-	-	0.1	0.3	4	3

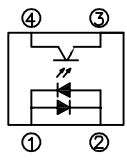
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				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=1mA, V _{CE} =2V	IF=20mA, I _C =100mA	V _{CE} =2V, I _C =20mA, R _L =1000Ω	MIN.	MAX.	TR
KB852		VDE0884. NO.40006364	High collector-emitter voltage High sensitivity	5000	350	1000	15000	-	1.2	100	20

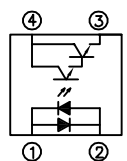
PART NUMBER	PIN CONFIGURATION	SAFETY STANDARDS	FEATURES	ABSOLUTE MAXIMUM RATINGS		ELECTRICAL CHARACTERISTICS					
				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=5mA, V _{CE} =5V	IF=20mA, I _C =1mA	V _{CE} =2V, I _C =2mA, R _L =100Ω	MIN.	MAX.	TR
KB817-B		UL NO.E225308 & VDE0884. NO.40006364	High isolation voltage SMD Type	5000	35	50	600	0.1	0.2	4	3

PART NUMBER	PIN CONFIGURATION	SAFETY STANDARDS	FEATURES	ABSOLUTE MAXIMUM RATINGS		ELECTRICAL CHARACTERISTICS					
				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=5mA, V _{CE} =5V	IF=20mA, I _C =1mA	V _{CE} =2V, I _C =2mA, R _L =100Ω	MIN.	MAX.	TR
KB817-M		UL NO.E225308 & VDE0884. NO.40006364	High isolation voltage	5000	35	50	600	0.1	0.2	4	3

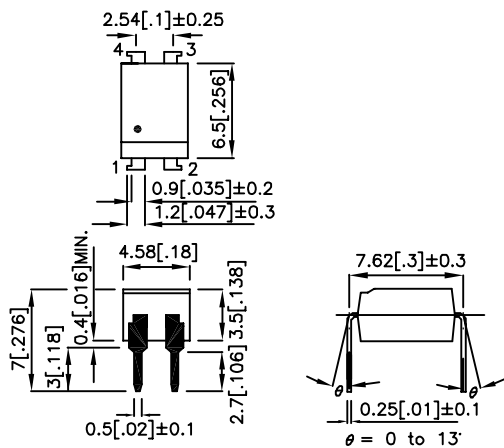
PART NUMBER	PIN CONFIGURATION	SAFETY STANDARDS	FEATURES	ABSOLUTE MAXIMUM RATINGS		ELECTRICAL CHARACTERISTICS					
				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=1mA, V _{CE} =2V		IF=20mA, I _C =1mA		V _{CE} =2V, I _C =2mA, R _L =100Ω	
						MIN.	MAX.	TYP.	MAX.	TR	TF
KB355NT		UL NO.E225308 & VDE0884. NO.40017614	High current transfer ratio Small package size	3750	35	600	7500	0.8	1.0	60	53

PART NUMBER	PIN CONFIGURATION	SAFETY STANDARDS	FEATURES	ABSOLUTE MAXIMUM RATINGS		ELECTRICAL CHARACTERISTICS					
				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=5mA, V _{CE} =5V		IF=20mA, I _C =1mA		V _{CE} =2V, I _C =2mA, R _L =100Ω	
						MIN.	MAX.	TYP.	MAX.	TR	TF
KB356NT		UL NO.E225308 & VDE0884. NO.40017614	High collector-emitter Voltage Small package size	3750	80	50	600	0.1	0.2	6	8
KB357NT			Small package size	3750	35	50	600	-	0.2	4	3

PART NUMBER	PIN CONFIGURATION	SAFETY STANDARDS	FEATURES	ABSOLUTE MAXIMUM RATINGS		ELECTRICAL CHARACTERISTICS					
				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=±1mA, V _{CE} =5V		IF=±20mA, I _C =1mA		V _{CE} =2V, I _C =2mA, R _L =100Ω	
						MIN.	MAX.	TYP.	MAX.	TR	TF
KB354NT		UL NO.E225308 & VDE0884. NO.40017614	AC.input response Small package size	3750	35	20	400	0.1	0.2	4	3

PART NUMBER	PIN CONFIGURATION	SAFETY STANDARDS	FEATURES	ABSOLUTE MAXIMUM RATINGS		ELECTRICAL CHARACTERISTICS					
				ISOLATION VOLTAGE(AC) VISO(Vrms)	COLLECTOR EMITTER VOLTAGE V _{CEO} (V)	CTR(%)		V(sat) (V)		RESPONSE TIME (μs) TYP.	
						IF=±1mA, V _{CE} =2V		IF=±20mA, I _C =1mA		V _{CE} =2V, I _C =2mA, R _L =100Ω	
						MIN.	MAX.	TYP.	MAX.	TR	TF
KB3541NT		UL NO.E225308 & VDE0884. NO.40017614	AC.input response High sensitivity Small package size	3750	35	450	7400	0.8	1.0	60	53

KB814, KB8141, KB815, KB816, KB817, KB851, KB852



KB814



KB8141



KB815



KB816



KB817

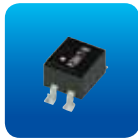


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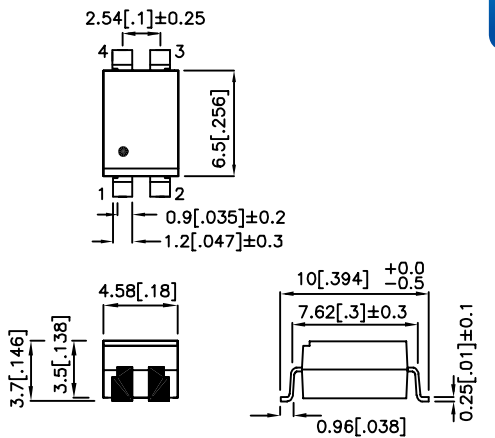


KB852

KB817-B



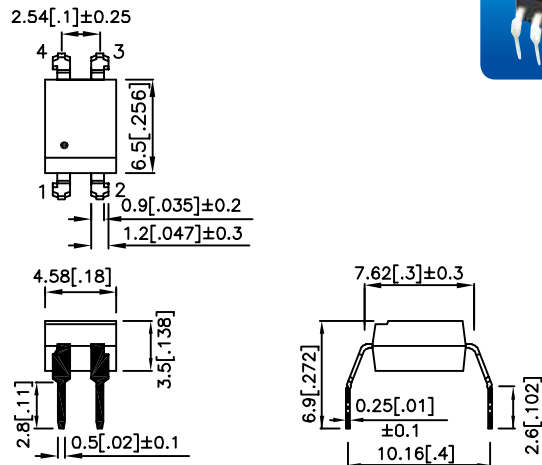
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KB817-M



KB817-M



KB355NT, KB356NT, KB357NT, KB354NT, KB3541NT



KB355NT



KB356NT



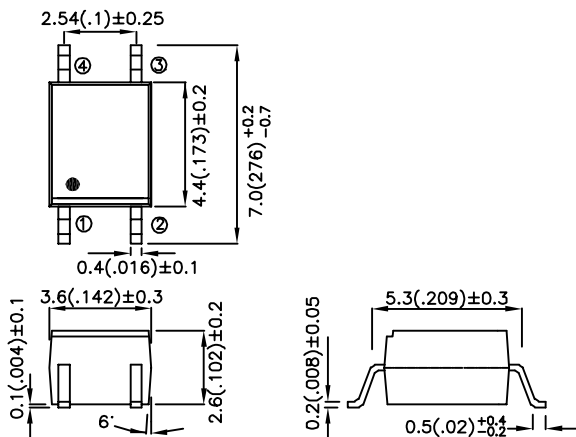
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KB354NT



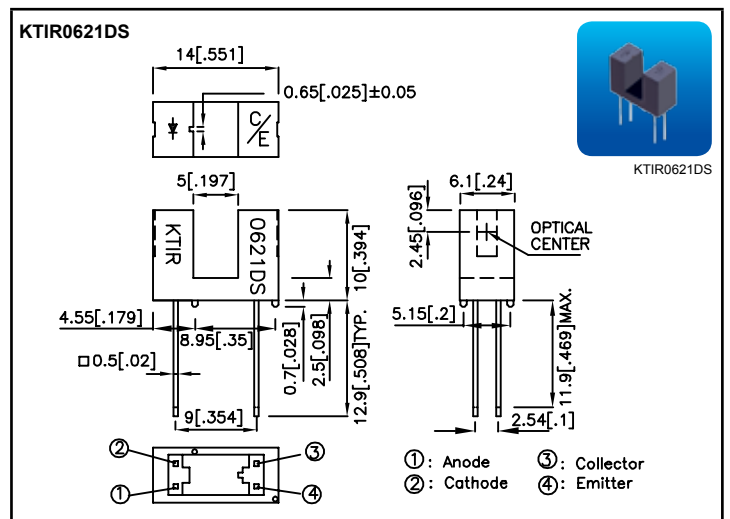
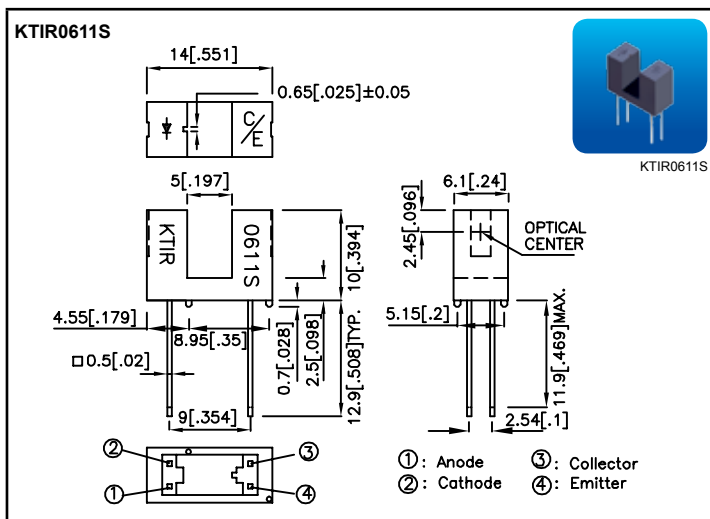
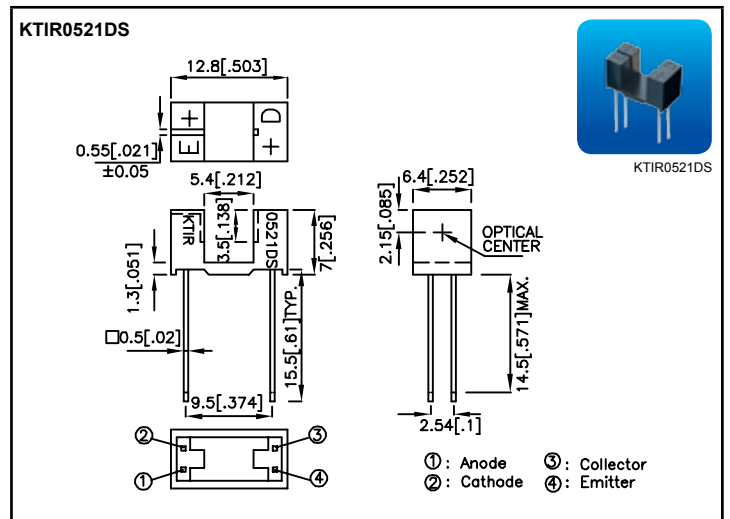
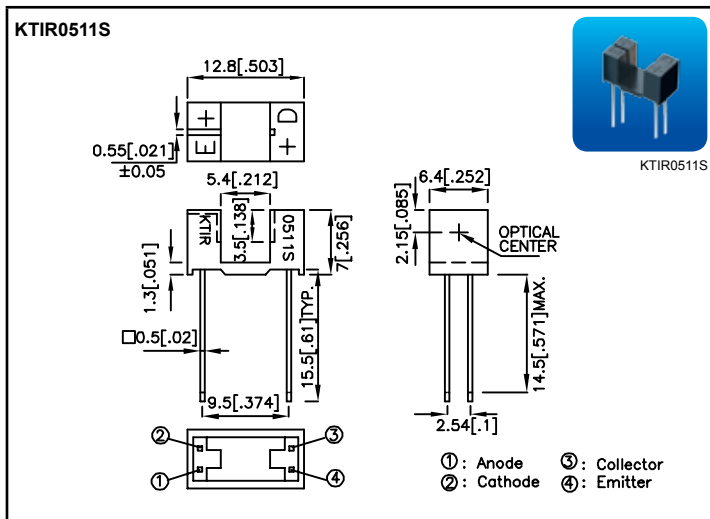
KB3541NT



NOTES:

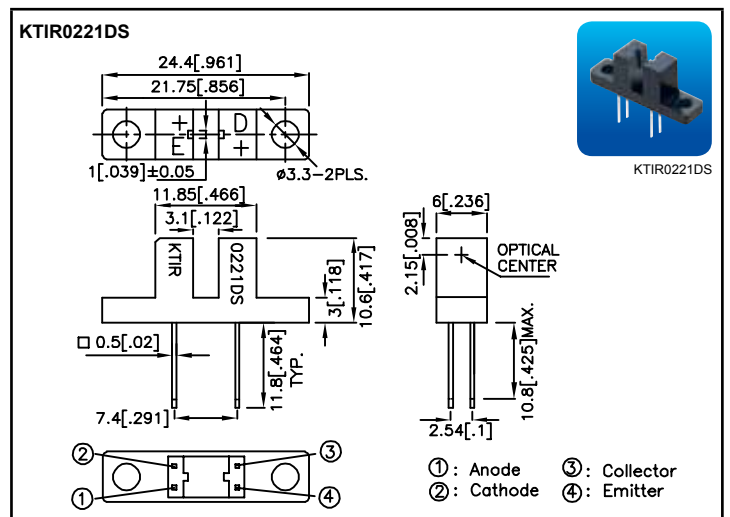
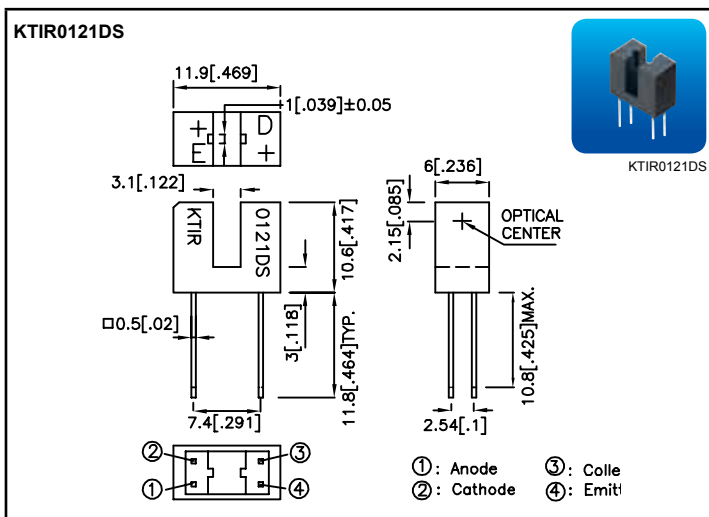
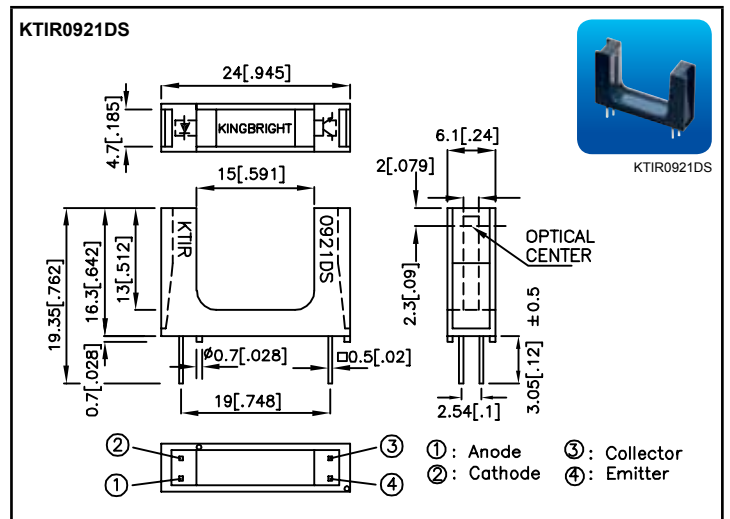
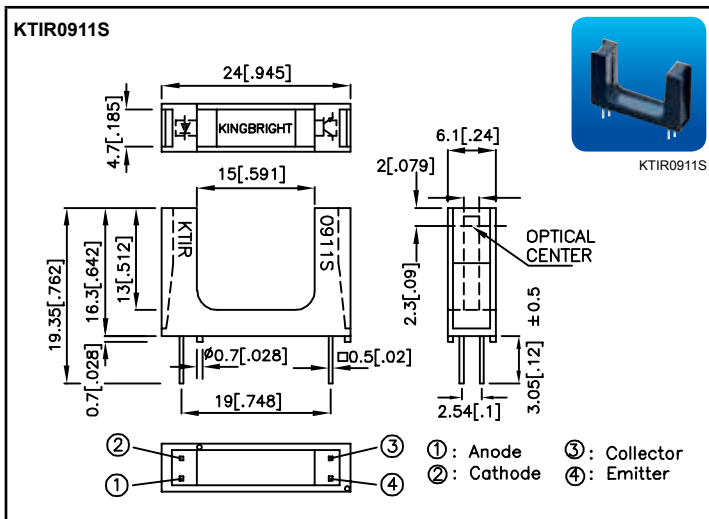
1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.5\text{mm}$ (0.02 ") unless otherwise noted.

PART NUMBER	PIN CONFIGURATION	MATERIAL	λ_P (nm)	CTR			$V_{CE(SAT)}$			RISE TIME (μs)	FALL TIME (μs)
				IF(mA)	$V_{CE(V)}$	TYP.(%)	IF(mA)	IC(mA)	MAX.(V)	TYP.	TYP.
KTIR0511S		GaAs/SiC	940	20	5	10	40	1	0.4	5	4
KTIR0521DS		GaAs/SiC	940	1	2	180	2	1	1	90	80
KTIR0611S		GaAs/SiC	940	20	5	14	40	1	0.4	5	4
KTIR0621DS		GaAs/SiC	940	1	2	200	2	1	1	90	80



NOTES:
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 2. Tolerance is $\pm 0.25mm(0.01")$ unless otherwise noted.

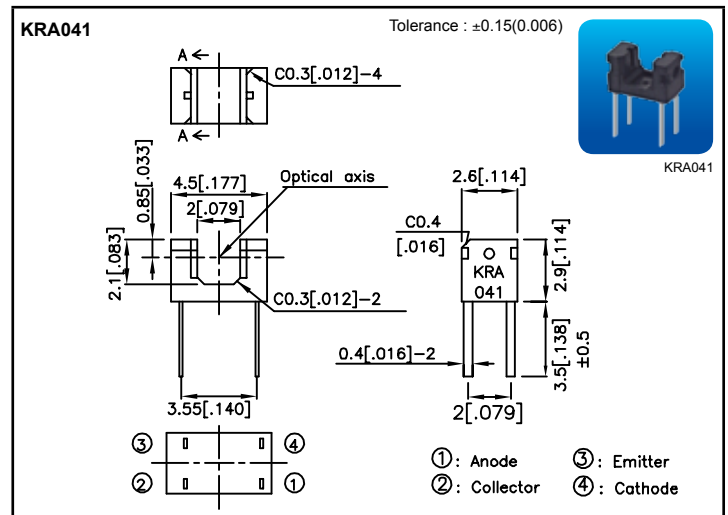
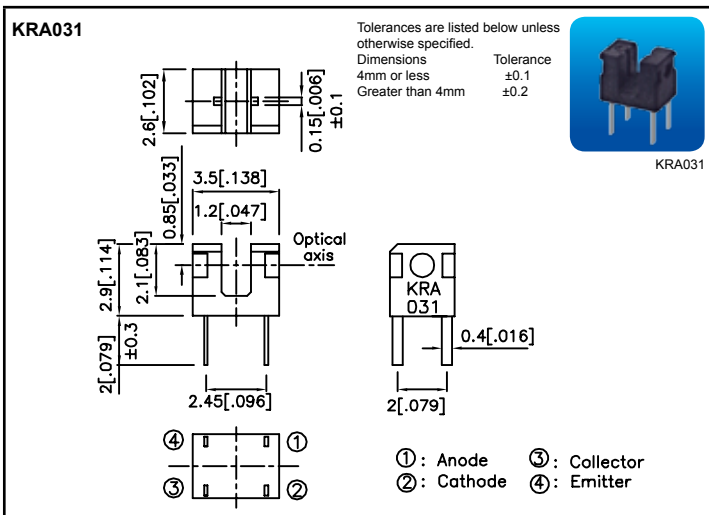
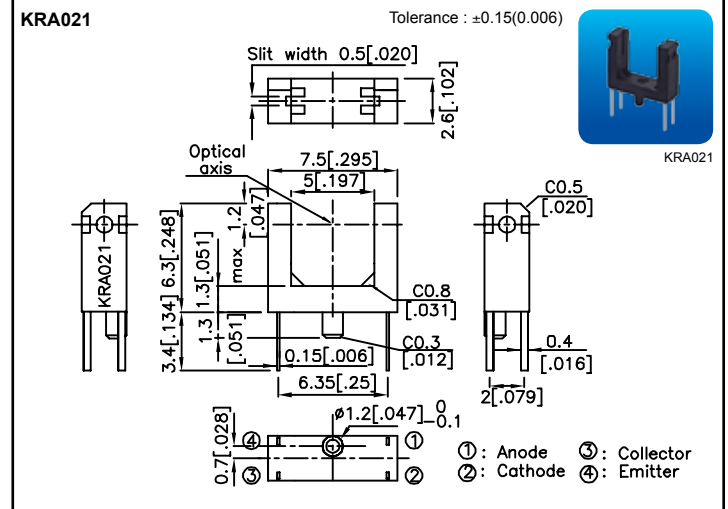
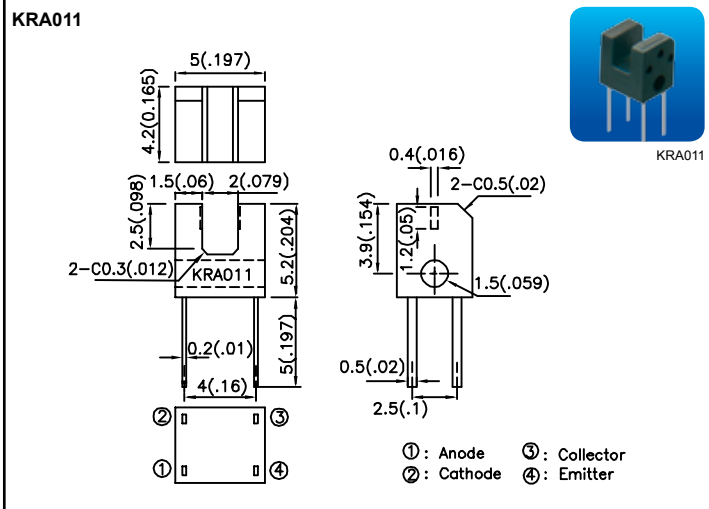
PART NUMBER	PIN CONFIGURATION	MATERIAL	λ_P (nm)	CTR			$V_{CE(SAT)}$			RISE TIME (μs)	FALL TIME (μs)
				IF(mA)	$V_{CE(V)}$	TYP.(%)	IF(mA)	IC(mA)	MAX.(V)	TYP.	TYP.
KTIR0911S		GaAs/SiC	● 940	20	5	9.5	40	1	0.4	5	4
KTIR0921DS		GaAs/SiC	● 940	1	2	120	2	1	1	90	80
KTIR0121DS		GaAs/SiC	● 940	1	2	600	2	1	1	90	80
KTIR0221DS		GaAs/SiC	● 940	1	2	600	2	1	1	90	80



NOTES:

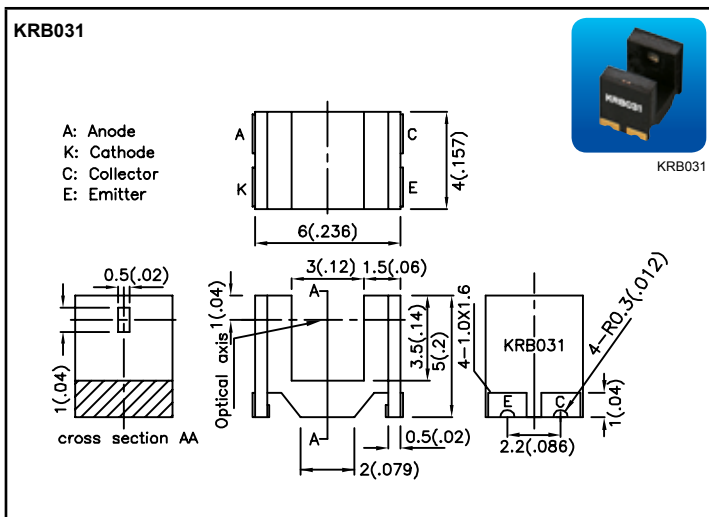
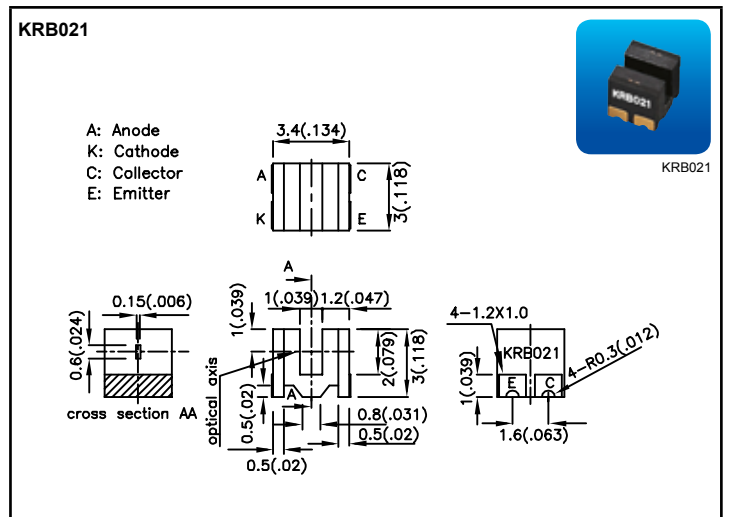
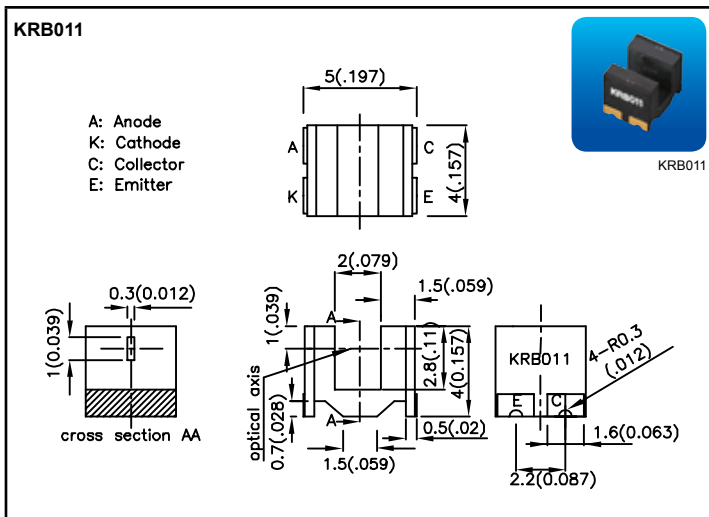
1. All dimensions are in millimeters(inches).
2. Tolerance is $\pm 0.25\text{mm}(0.01")$ unless otherwise noted.

PART NUMBER	PIN CONFIGURATION	MATERIAL	λ_P (nm)	CTR			$V_{CE(SAT)}$			RISE TIME (μ s)	FALL TIME (μ s)
				IF(mA)	$V_{CE(V)}$	TYP.(%)	IF(mA)	IC(mA)	MAX.(V)	TYP.	TYP.
KRA011		GaAs/SiC	940	5	5	8	10	0.04	0.4	50	50
KRA021		GaAs/SiC	940	10	2	18	20	0.25	0.4	15	15
KRA031		GaAs/SiC	940	5	2	10	10	0.15	0.4	15	15
KRA041		GaAs/SiC	940	5	2	6	10	0.4	0.4	15	15



NOTES:
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 2. Tolerance is $\pm 0.25\text{mm}(0.01\text{'})$ unless otherwise noted.

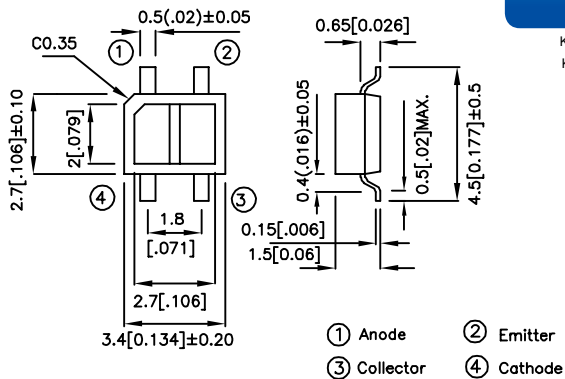
PART NUMBER	PIN CONFIGURATION	MATERIAL	λ_p (nm)	CTR			$V_{CE(SAT)}$			RISE TIME (μ s)	FALL TIME (μ s)
				IF(mA)	$V_{CE(V)}$	TYP.(%)	IF(mA)	IC(mA)	MAX.(V)	TYP.	TYP.
KRB011		GaAs/SiC	940	5	5	3	20	0.05	0.4	8	10
KRB021		GaAs/SiC	940	5	5	3	20	0.05	0.4	8	10
KRB031		GaAs/SiC	940	5	5	3	20	0.05	0.4	8	10



NOTES:
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2. Tolerance is $\pm 0.15\text{mm}(0.006\text{'})$ unless otherwise noted.

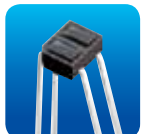
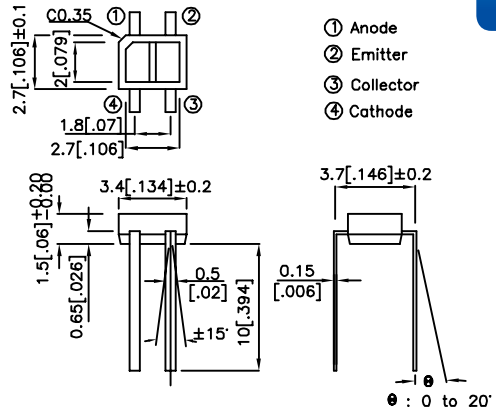
PART NUMBER	PIN CONFIGURATION	MATERIAL	λ_P (nm)	IC (μ A)			V _{CE(SAT)}			RISE TIME (μ s)	FALL TIME (μ s)
				V _{CE} =2V, I _F =4mA			I _F (mA)	I _C (mA)	MAX.(V)	TYP.	TYP.
				MIN.	TYP.	MAX.					
KTIR0711S		GaAs/SiC	● 940	10	-	400	-	-	-	20	20
KTIR0721DS		GaAs/SiC	● 940	-	3000	-	-	-	-	80	70
KTIR0811S		GaAs/SiC	● 940	10	-	400	-	-	-	20	20
KTIR0821DS		GaAs/SiC	● 940	-	3000	-	-	-	-	80	70

KTIR0711S & KTIR0721DS



KTIR0711S &
KTIR0721DS

KTIR0811S & KTIR0821DS



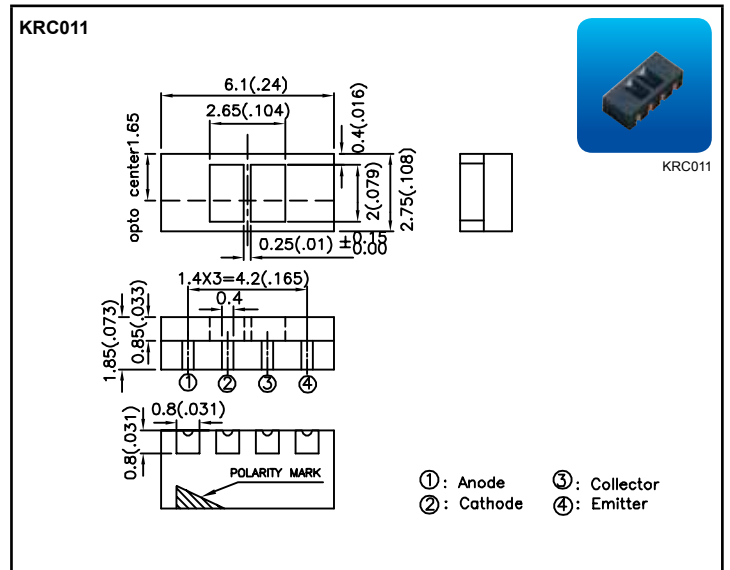
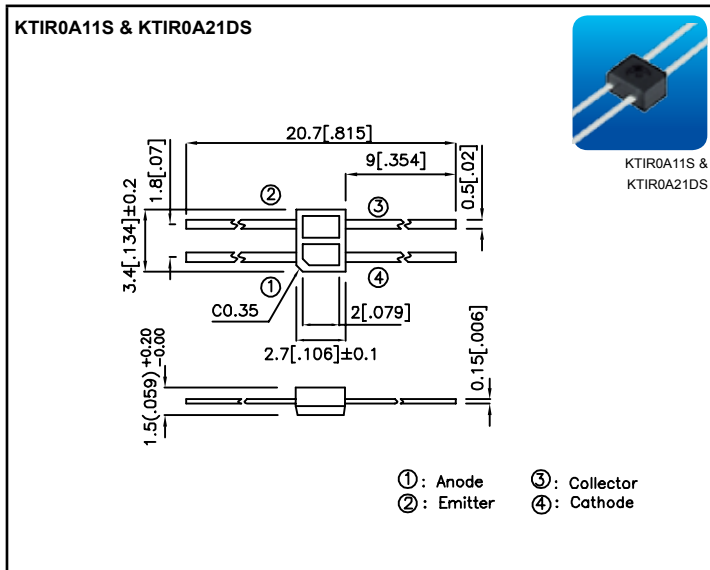
KTIR0811S &
KTIR0821DS

NOTES:

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2. Tolerance is $\pm 0.25\text{mm}(0.01\text{'})$ unless otherwise noted.

PART NUMBER	PIN CONFIGURATION	MATERIAL	λ_P (nm)	IC (μ A)			V _{CE(SAT)}			RISE TIME (μ s)	FALL TIME (μ s)
				V _{CE} =2V, I _F =4mA			I _F (mA)	I _C (mA)	MAX.(V)	TYP.	TYP.
				MIN.	TYP.	MAX.					
KTIR0A11S		GaAs/SiC	940	10	-	400	-	-	-	20	20
KTIR0A21DS		GaAs/SiC	940	-	3000	-	-	-	80	70	

PART NUMBER	PIN CONFIGURATION	MATERIAL	λ_P (nm)	IC (μ A)			V _{CE(SAT)}			RISE TIME (μ s)	FALL TIME (μ s)
				V _{CE} =5V, I _F =20mA			I _F (mA)	I _C (mA)	Max.(V)	Typ.	Typ.
				MIN.	TYP.	MAX.					
KRC011		GaAs/SiC	940	10	-	300	-	-	20	20	



NOTES:
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 2. Tolerance is ±0.25mm(0.01") unless otherwise noted.